BIXOLON®

Network Connection Manual
TX / DX / DL Series
SRP-770III/E770III

Ver. 2.00

http://www.bixolon.com

Table of Contents

1. Introduction

This Network manual provides information on the connection of network with the Industrial Label printer. We at BIXOLON maintain ongoing efforts to enhance and upgrade the functions and quality of all our products. In following, product specifications and/or user manual content may be changed without prior notice.

2. Precaution

1) Using WLAN in TX / DX / DL Series / SRP-770III / E770III requires WLAN USB Adapter. We recommend using the WLAN USB Adapter provided by BIXOLON. If not, WLAN may not work.

※   **Certificated WLAN USB Adapter : TP-LINK Archer T2U AC600, TP-LINK TL-WN727N**

2) The maximum separating distance may be shortened if transmission obstacles, such as cement walls, are present

3) If a device (such as a microwave oven, wireless LAN, etc.) that uses the same frequency is present, transmission may be interrupted. Separate the printer and Bluetooth-enabled device from such interrupting devices by a distance of at least 5m.

3. How to Connect

Both Ethernet and WLAN can be configured through the printer's LCD Display, USB, Ethernet or WLAN interface.

When you want to change the Ethernet or WLAN of the printer, the network settings of the host(PC, PDA, etc) and Ethernet or WLAN of the printer must configured properly configured so that communication can be established.

3-1 Connecting Printer
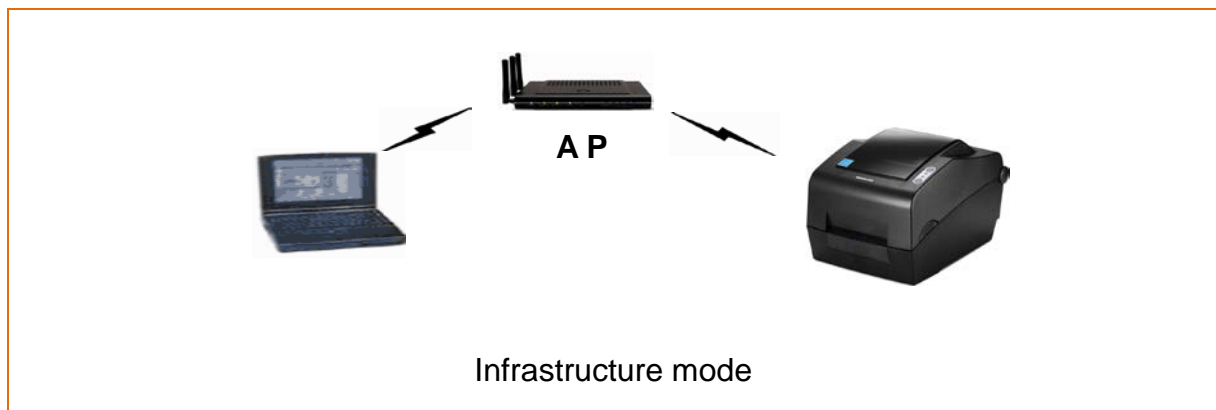
1) USB
Connect the USB cable to the printer

2) Ethernet
Connect the LAN cable to the printer
A direct cable or cross cable can be connected to the Hub or Host for use.

3) WLAN
Connect to the AP(Access Point) configured in Infrastructure mode in order to connect to the Wireless network.

A P

Infrastructure mode

In order to configure the network between wireless terminals, connect to the terminal in Ad-hoc Mode.

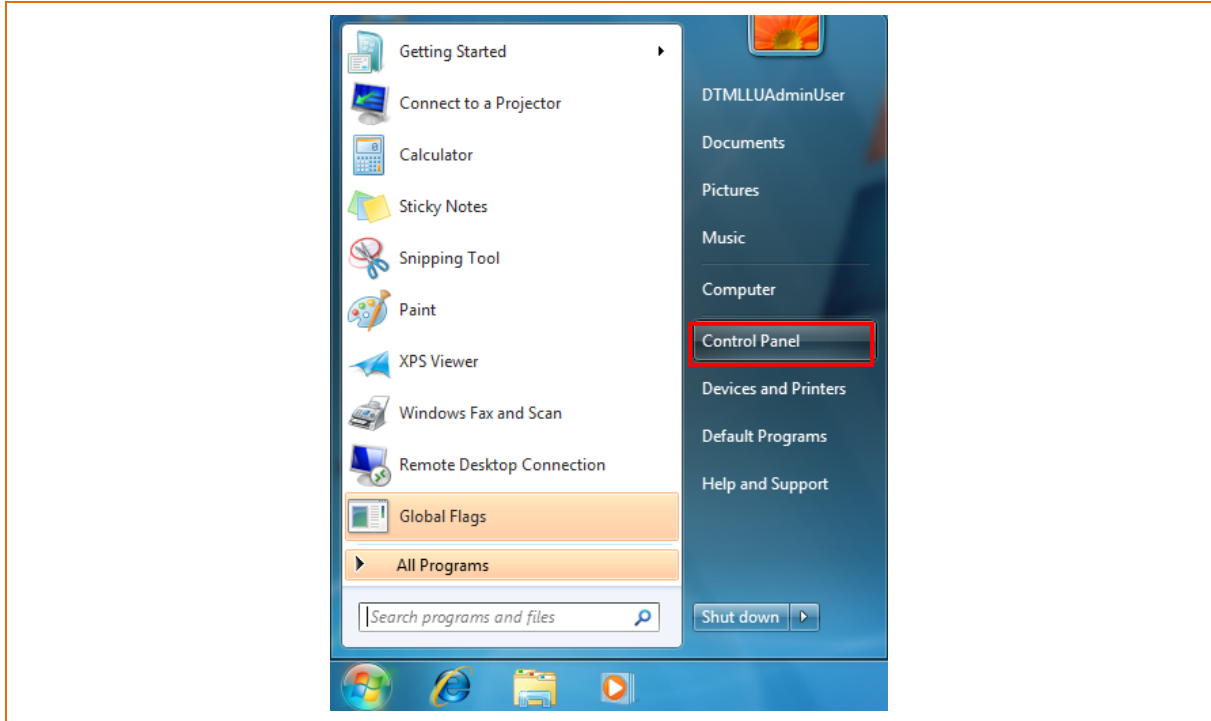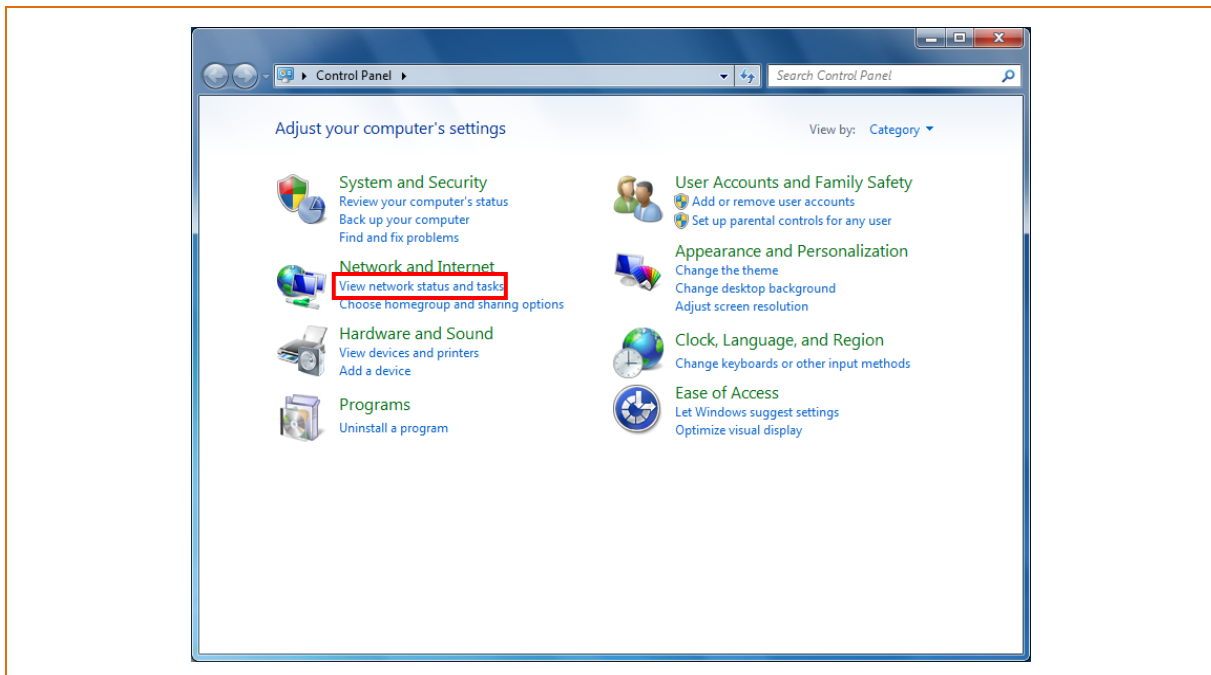Ad-hoc mode

3-2 Initial Wireless LAN Connection(Windows 10)
• If a wireless LAN utility program is installed, set it using the program or exit the wireless program and set it in the following orders.
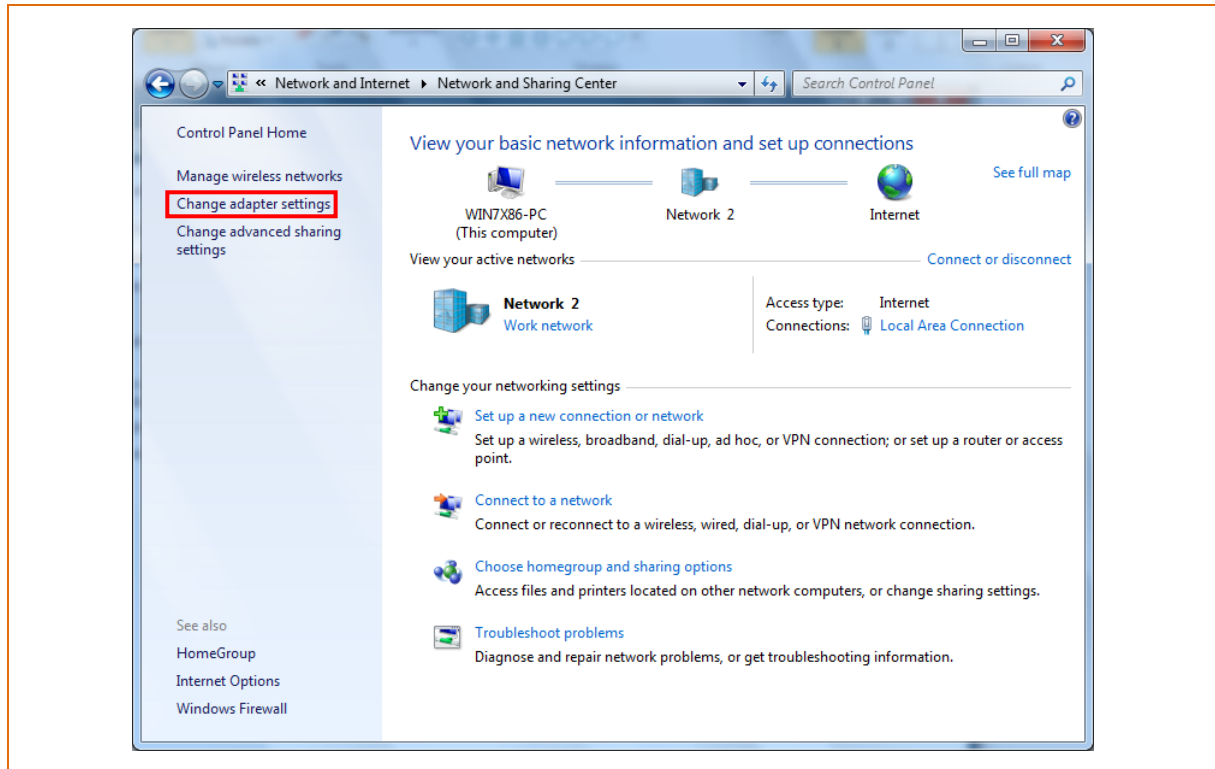
1) Search the "Control Panel" and then Click the "Open".

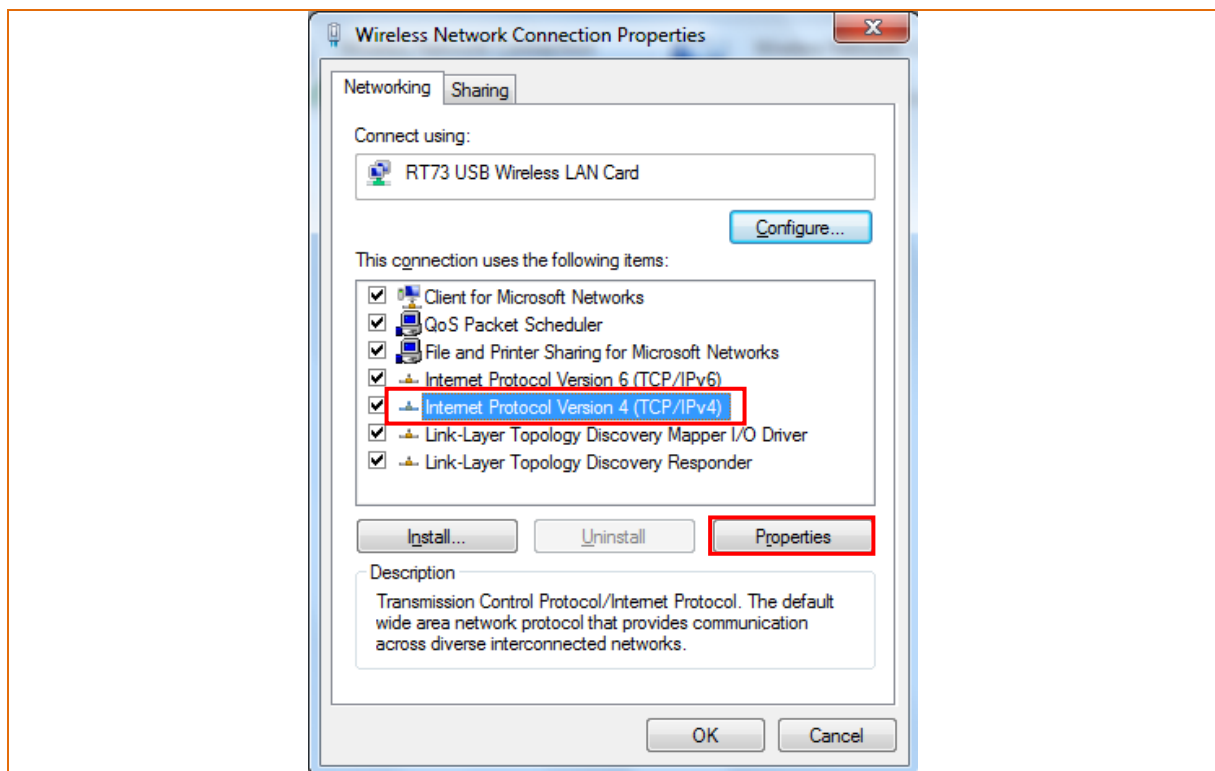2) Click the "View network status and tasks".
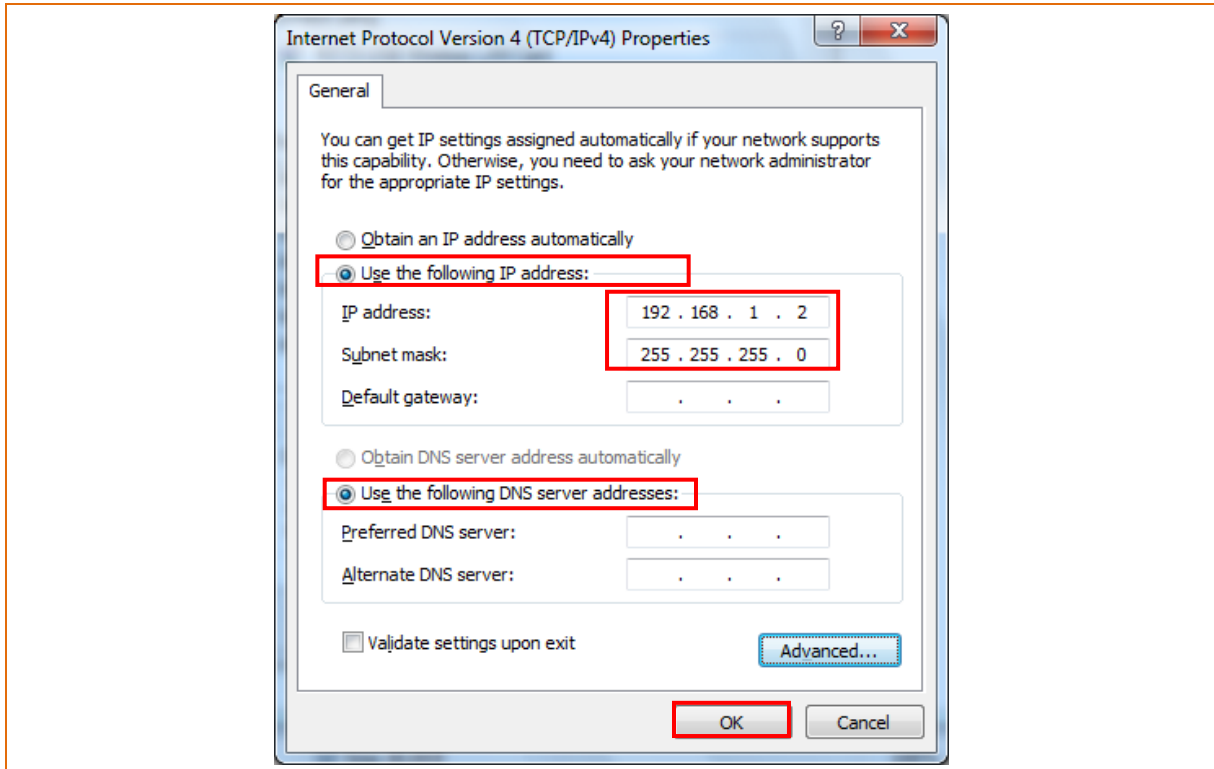
3) Click the "Change adapter settings".

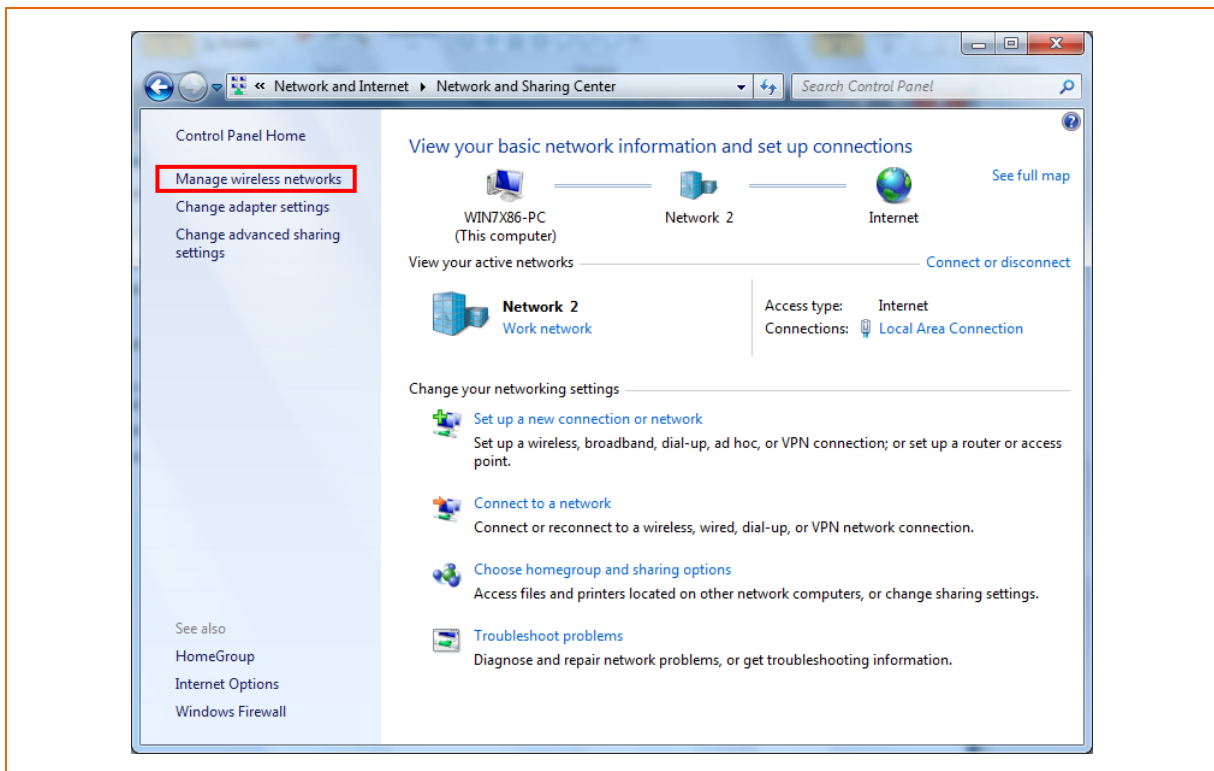Click the "wireless network adaptor's Properties". (Windows 10 : "WiFi Properties")

4) Select Internet Protocol Version 4(TCP/IPv4), and then click Properties.

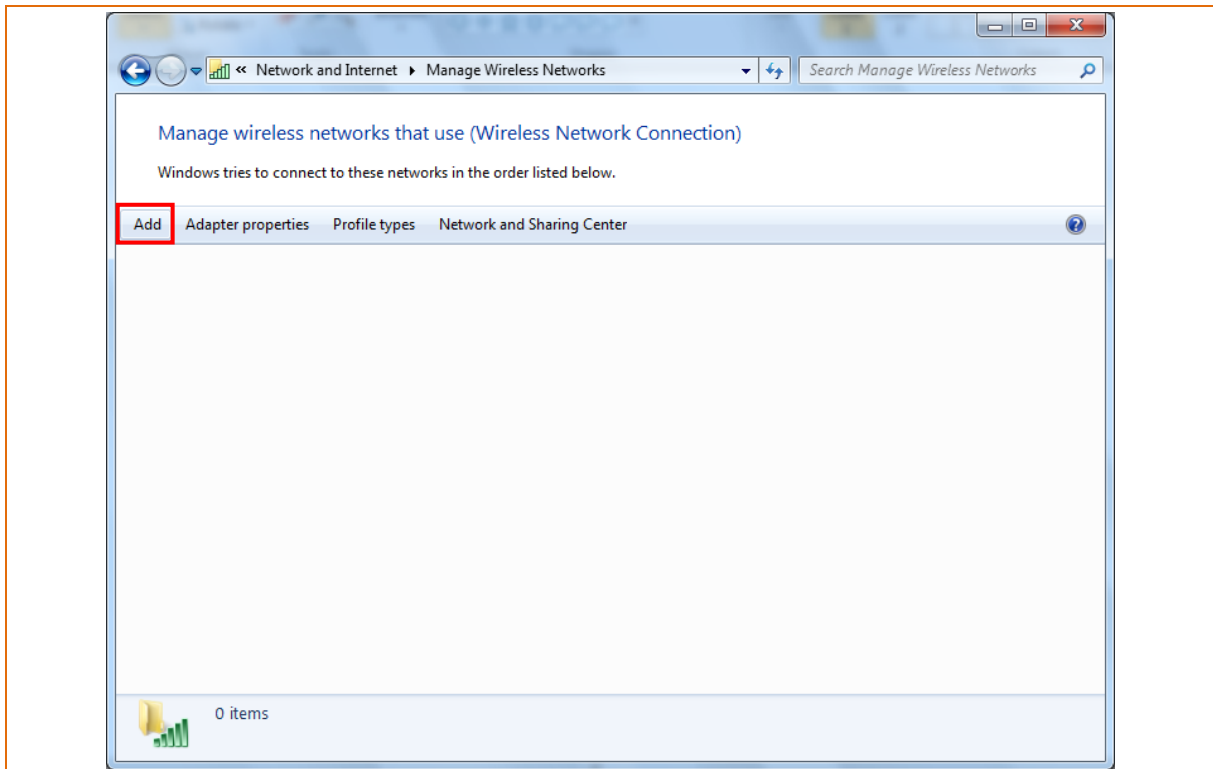5) Set the IP settings as shown below, and then click OK.

6) Click the "Manage wireless networks". (Windows10:"Set up a new connection or network")

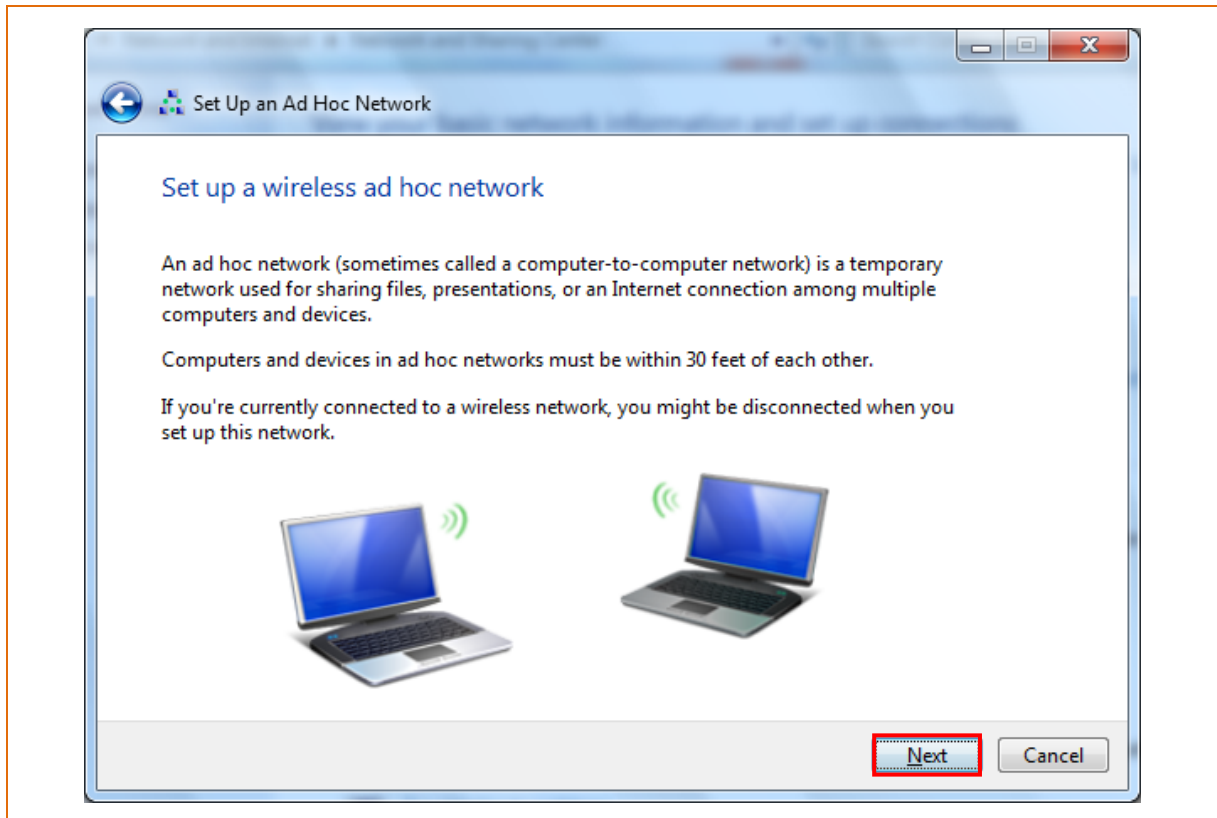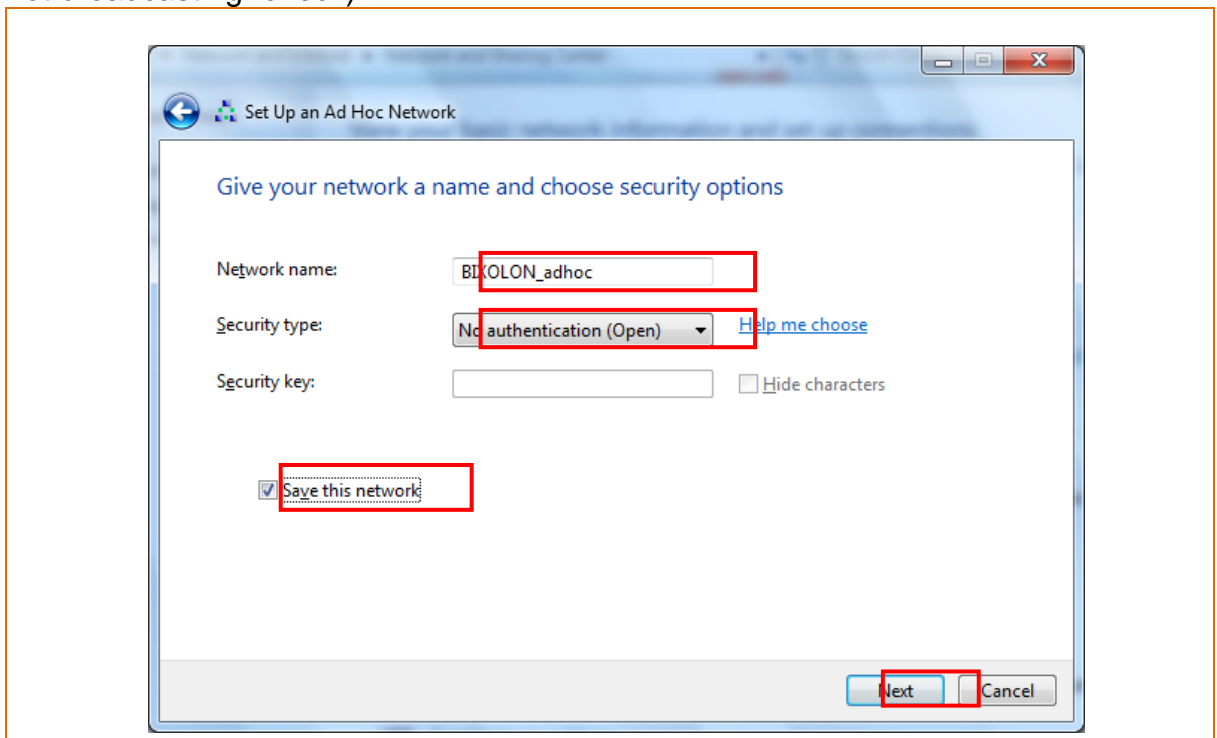7) Click the "Add". (Windows 10 : "Manually create a wireless network")

8) Click the "Create an ad hoc network".
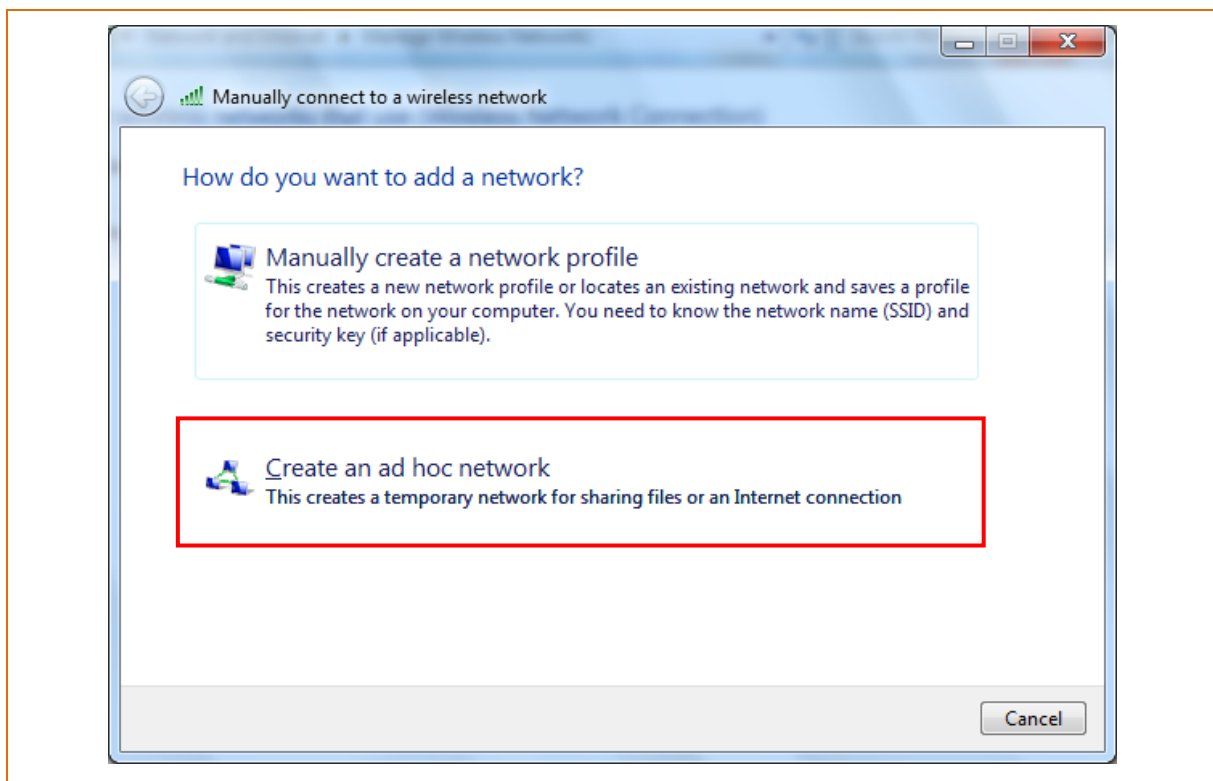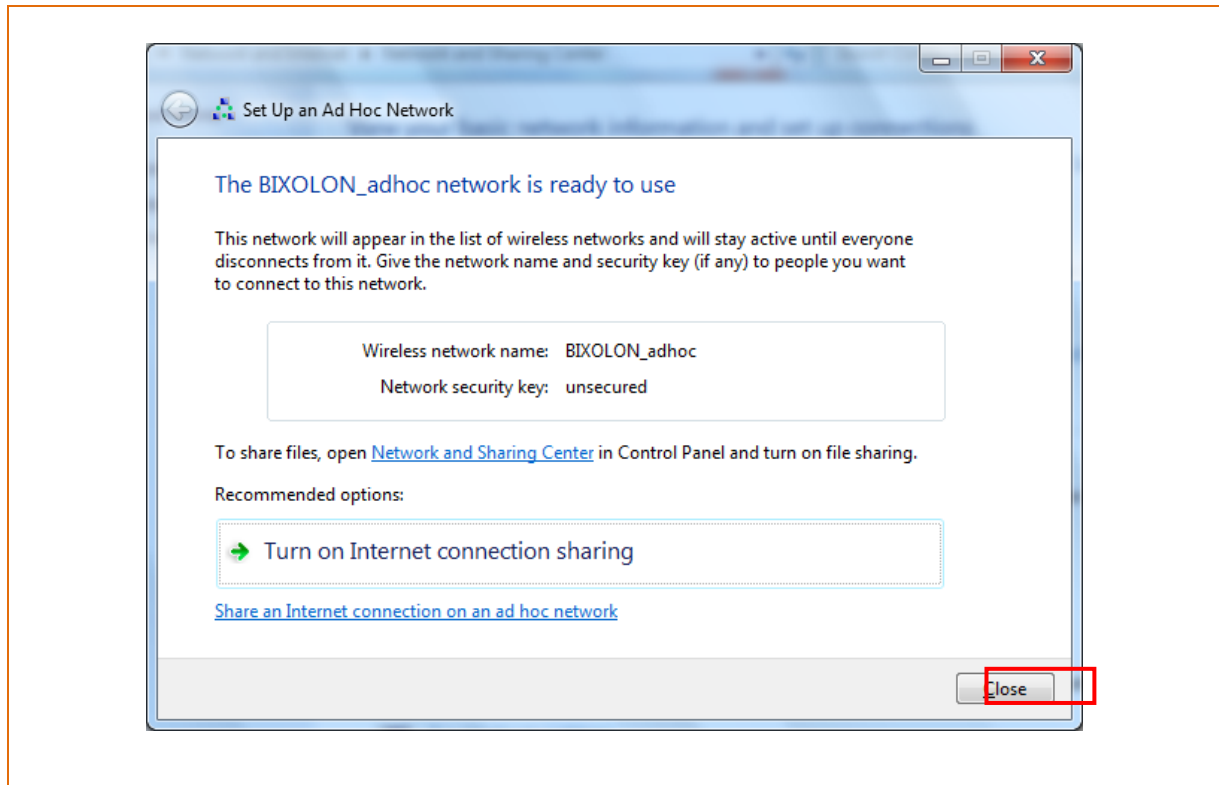
9) Click the "Next".

10) 'Network name' = BIXOLON_adhoc,
    'Security type' = Open,
    'Save this network' check, and then click the "Next".
    (Windows 10 : "Start this connection automatically" / "Connect even if the network is not broadcasting" check)

11) Click the "Close".

12) After completing configuration, Bixolon_adhoc network will be created.
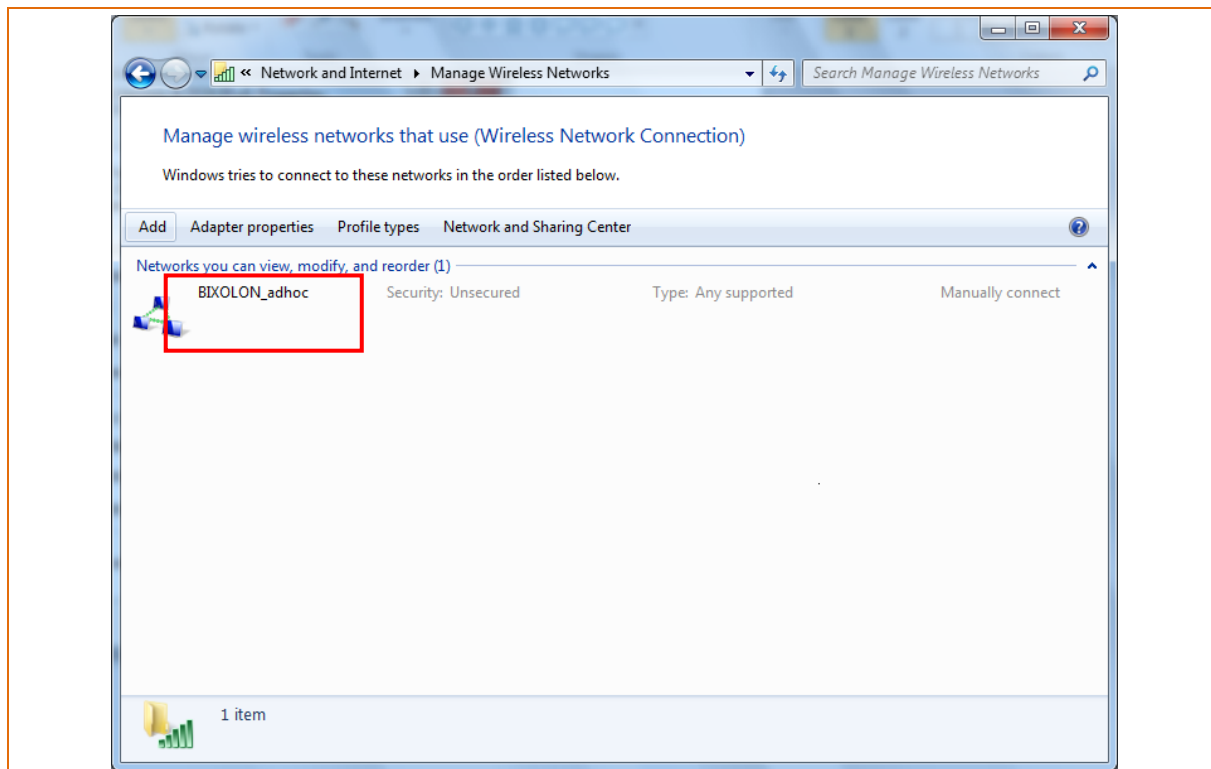
When the printer is set to the default value (Adhoc mode, SSID: BIXOLON_adhoc), it will automatically connect.

※Adhoc connection may not supported according to the security policy on Windows 10. In this case, use "Web Server" or "Net Configuration Tools" for network setting.
※Please refer to the below table for printer network setting depends on the version of Printer Firmware.

	V01.40 under	V01.40 and over	Remarks
Web Server	O	O	Refer 4-3-3
Net Configuration Tool	X	O	Refer 4-4

4. Configuration

4-1 LAN Setting Values

Classification	Item	Remarks	Input Range
Home		LAN setting status display	
System	Printer Name	Printer name	0~32 letters
	Printer Port	TCP Raw port that the printer can use	0~32767 integer (except 1,23,25, 80,443,3318)
	User Name	ID to use for ftp, telnet, web-server log-in	1~32 letters
	User Password	Password to use for ftp, telnet, web-server log-in	1~32 letters
	Confirm Password	Confirm Password	1~32 letters
Protocol	WebServer SSL	Set whether to use HTTPS Http cannot be used when using Https	Enable/Disable
	TELNET	Set whether to use Telnet	Enable/Disable
	FTP	Set whether to use FTP	Enable/Disable
	SMTP	Set whether to use SMTP	Enable/Disable
Network	Inactivity Time	TCP connection hold time	0~3600 integer(Sec)
	IP Assignment Method	IP assignment method	DHCP/Manual
	IP Address	Printer IP	IP Address
	Subnet Mask	Subnet mask	IP Address
	Gateway	Default Gateway	IP Address
	DNS	Domain name server IP	IP Address

4-2 WLAN Setting Values

| Classification	Item	Remarks	Input Range
Home		WLAN setting status display	
System	Printer Name	Printer Name	0~32 letters
	Printer Port	TCP Raw port that the printer can use	0~32767 integers (except 21,23,25,80,443, 3318)
	User Name	ID to use for ftp, telnet, web-server log-in	1~32 letters
	User Password	Password to use for ftp, telnet, web-server log-in	1~32 letters
	Confirm Password	Confirm Password	1~32 letters
Protocol	WebServer SSL	Set whether to use HTTPS Http cannot be used when using Https	Enable/Disable
	TELNET	Set whether to use Telnet	Enable/Disable
	FTP	Set whether to use FTP	Enable/Disable
	SMTP	Set whether to use SMTP	Enable/Disable
Network	Network Mode	Wireless LAN operating mode	Infrastructure/Adhoc
	Adhoc Channel	Channel when creating Adhoc network	1~14
	SSID	ID of the AP to connect	1~32 letters
	Inactivity Time	TCP connection hold time	0~3600 integer
	IP Assignment Method	IP Assignment Method	DHCP/Manual
	IP Address	Printer IP	IP Address
	Subnet Mask	Subnet mask	IP Address
	Gateway	Default Gateway	IP Address
	DNS	Domain name server IP	IP Address
Authentication	Authentication	Wireless LAN authentication method	open, shared, wpa1/2-psk, wpa1/2
	Cryptograph	Wireless LAN encryption method	none, WEP64/128,TKIP, AES
	EAP Mode	Authentication method	none, PEAP, TLS, LEAP, FAST
	WEP Key	Key for WEP encryption method	WEP64(5 Ascii, 10 Hex) WEP128(13 Ascii, 26 Hex)
	PSK Key	Key for PSK encryption method	1~64 letters
	Authentication ID	ID for EAP Authentication	1~32 letters
	Authentication PW	Password for EAP Authentication	1~32 letters
Wizard		Setting wizard for each step	

4-3 Configuration Tool
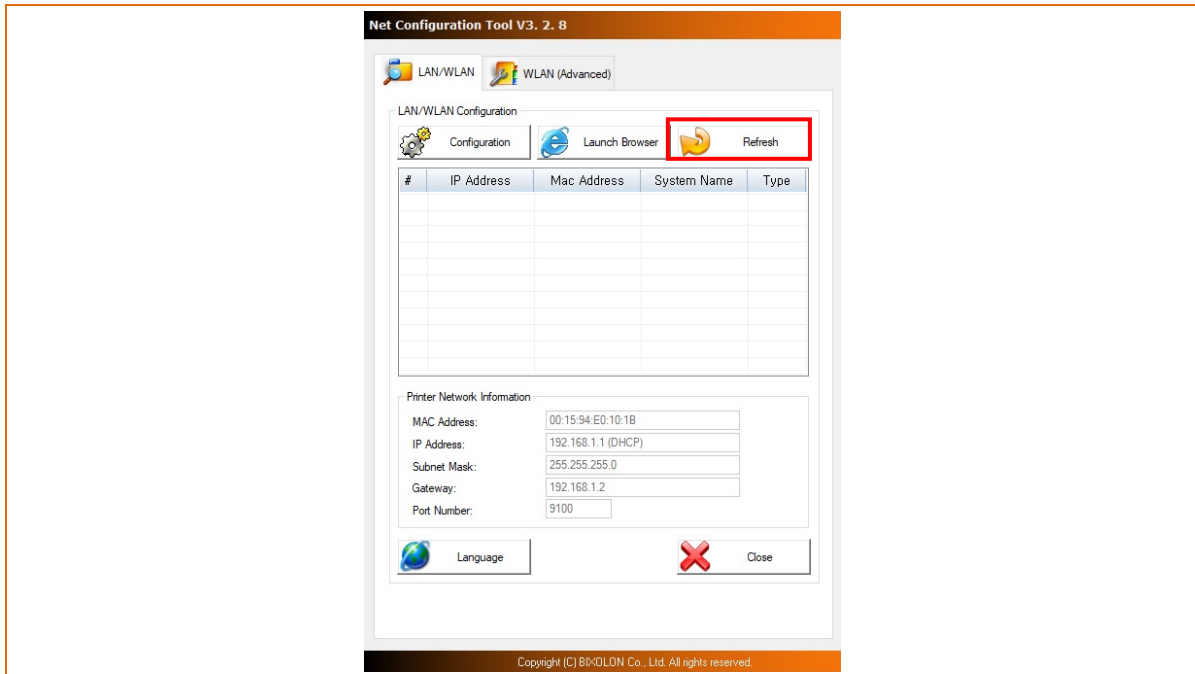• Install Net Configuration Setup_[version] and execute.

> *[Note]*
> - You can download from our home page the Net Configuration Setup_[version].
> (**www.bixolon.com**)

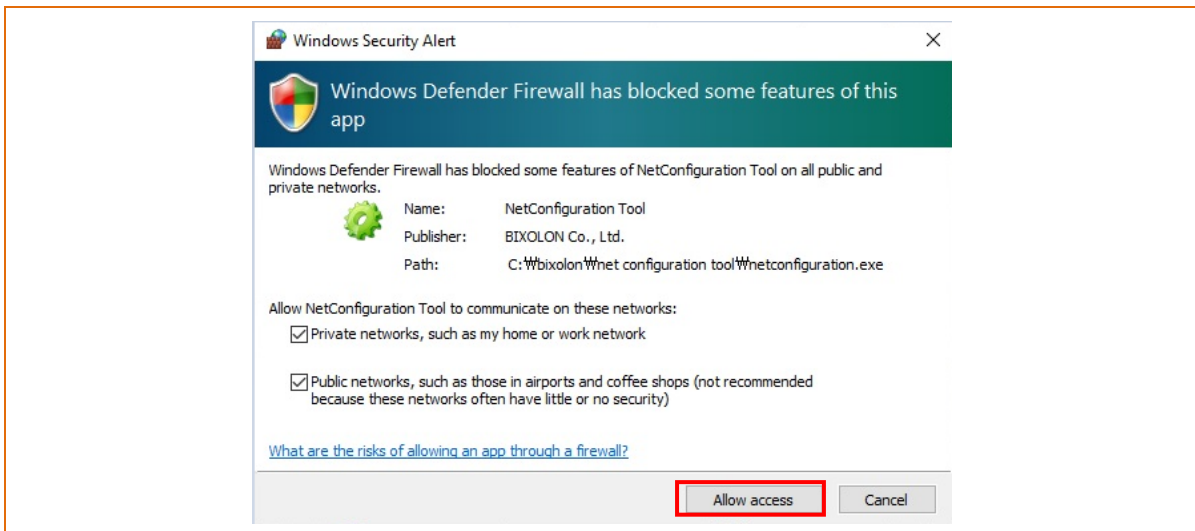(Search the "Net Configuration" and then Click the "Open")
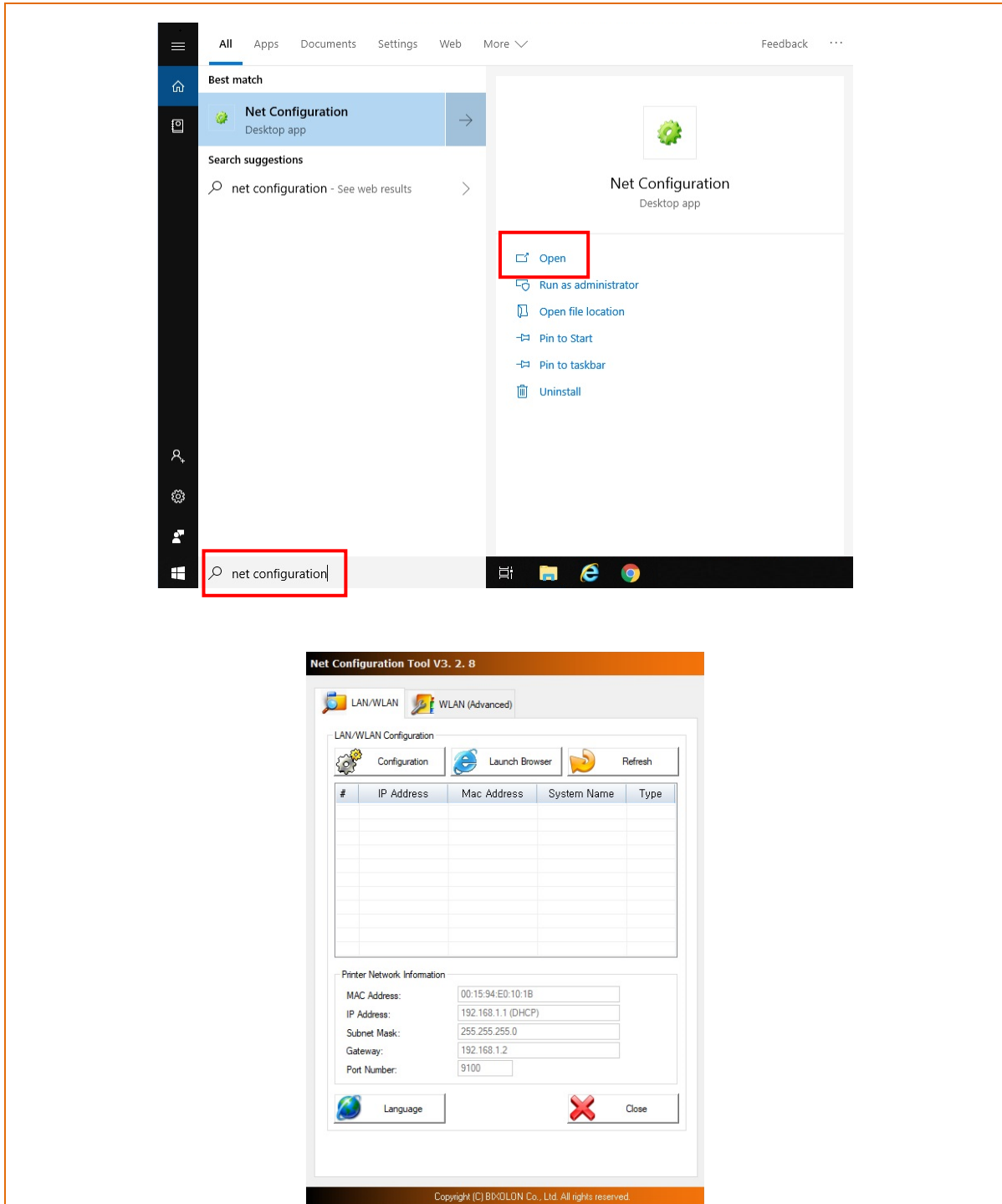
4-3-1 Ethernet Configuration

1) When you press the Search button, the printer connected to the network will be shown in the list.

2) The following warning message may pop up if the firewall is installed.
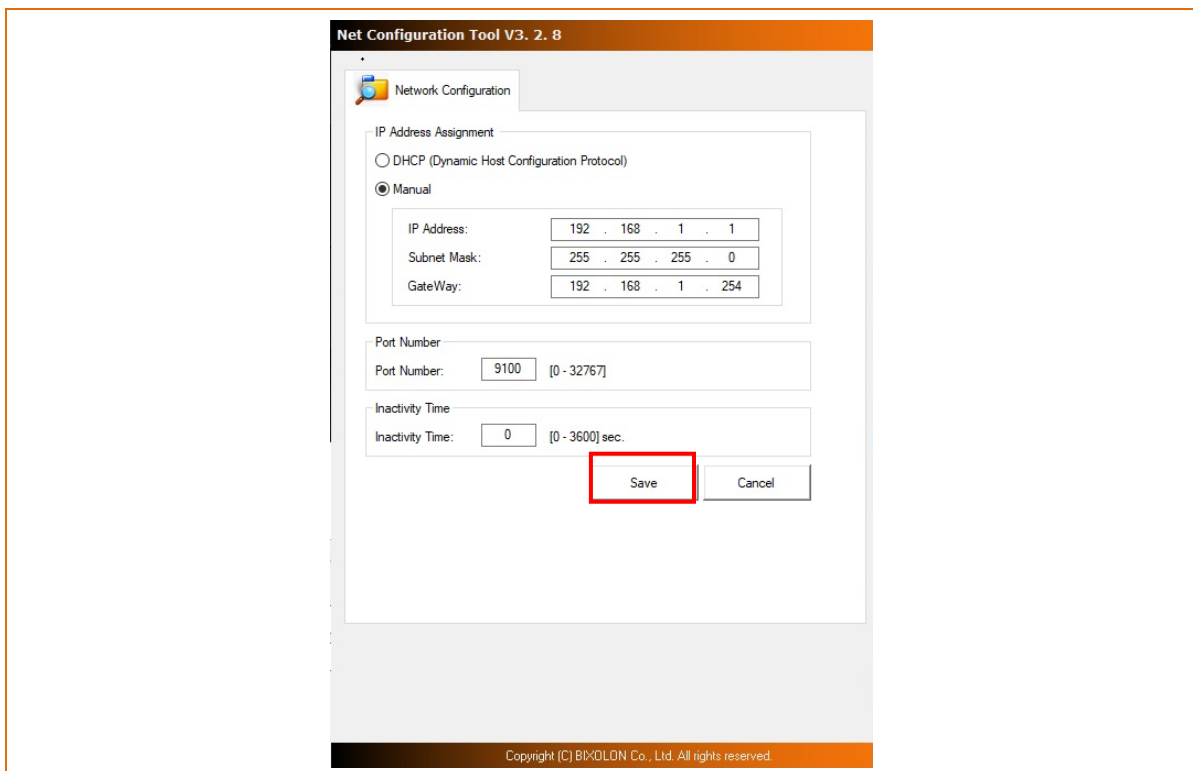   Select [Allow access], and then retry the Search operation.

3) Select the printer from the list and press the [Configuration] button, and then the following window for setting Ethernet settings will pop up.
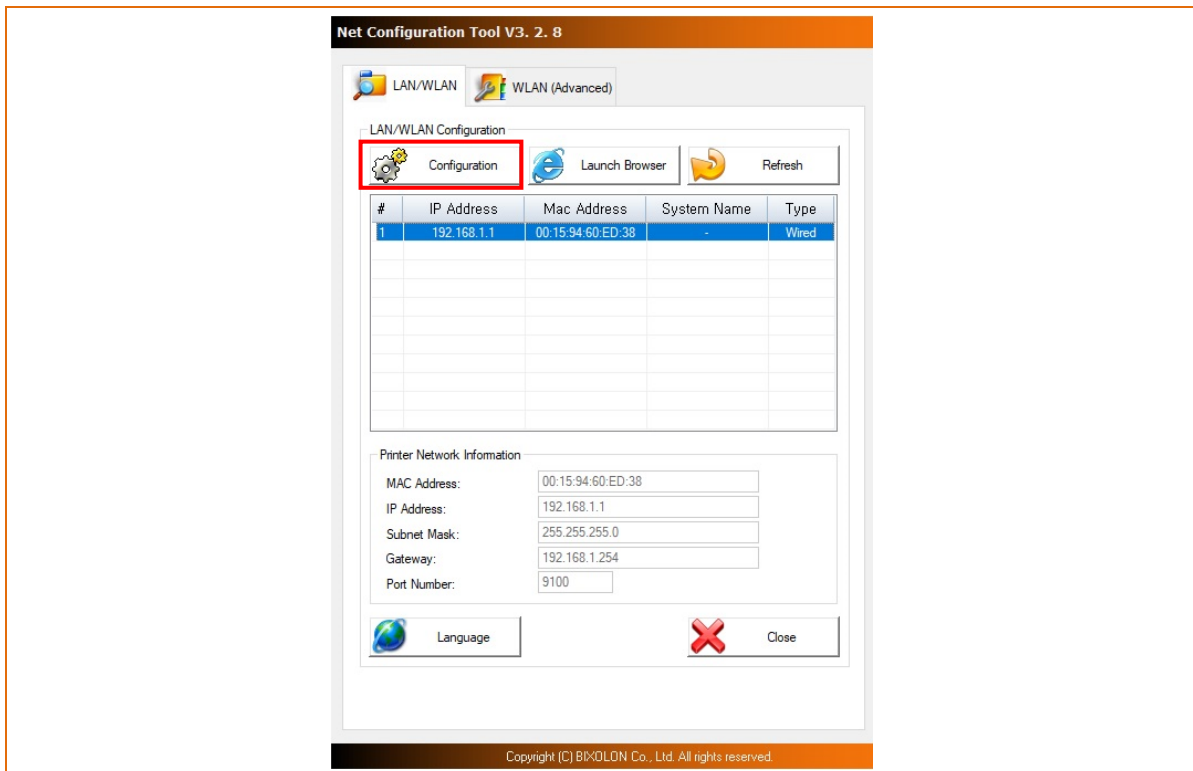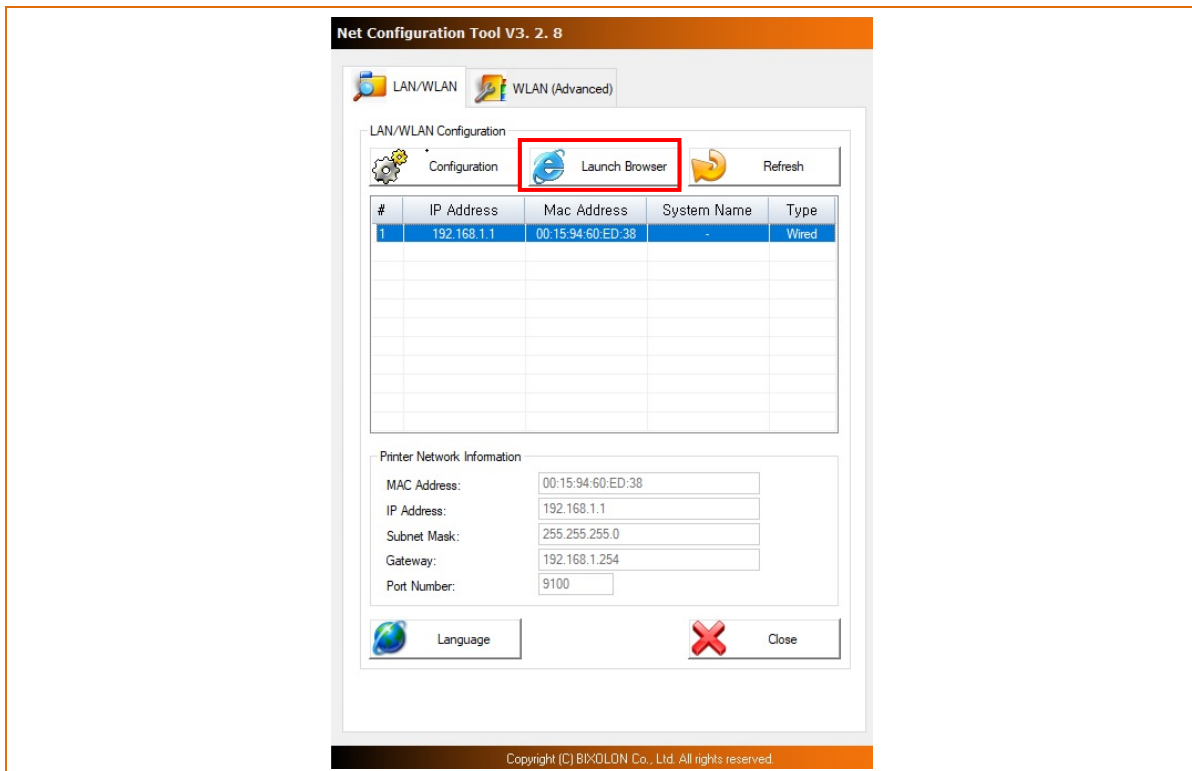

4) Enter the proper IP Address, Subnet Mask, and Gateway for the currently used network, and then press the Save button to save the settings.
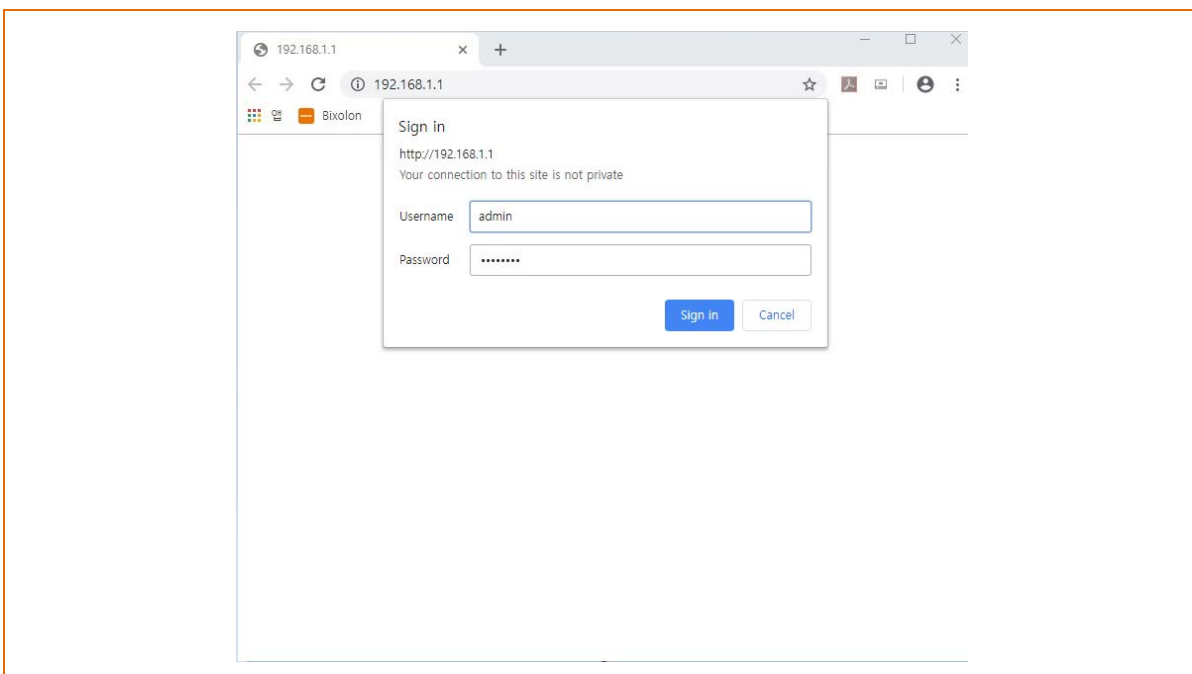
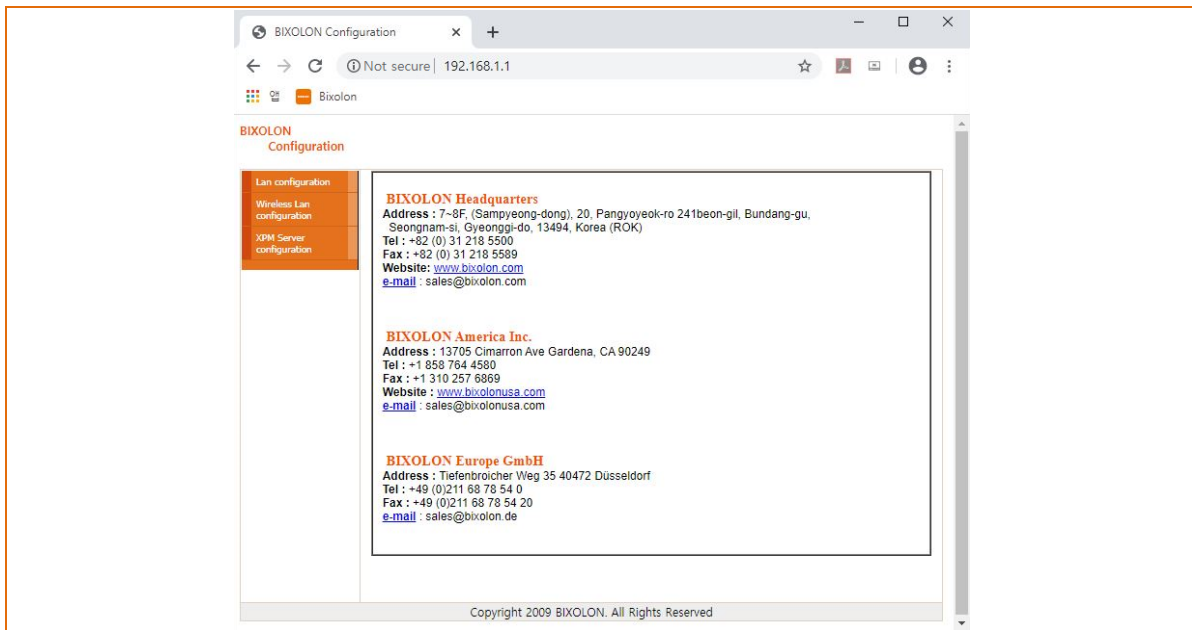5) Select the printer from the list and press the [Launch Browser] button, and then the Login window will pop up.

6) Enter the Username and Password set for the printer, and then click OK.
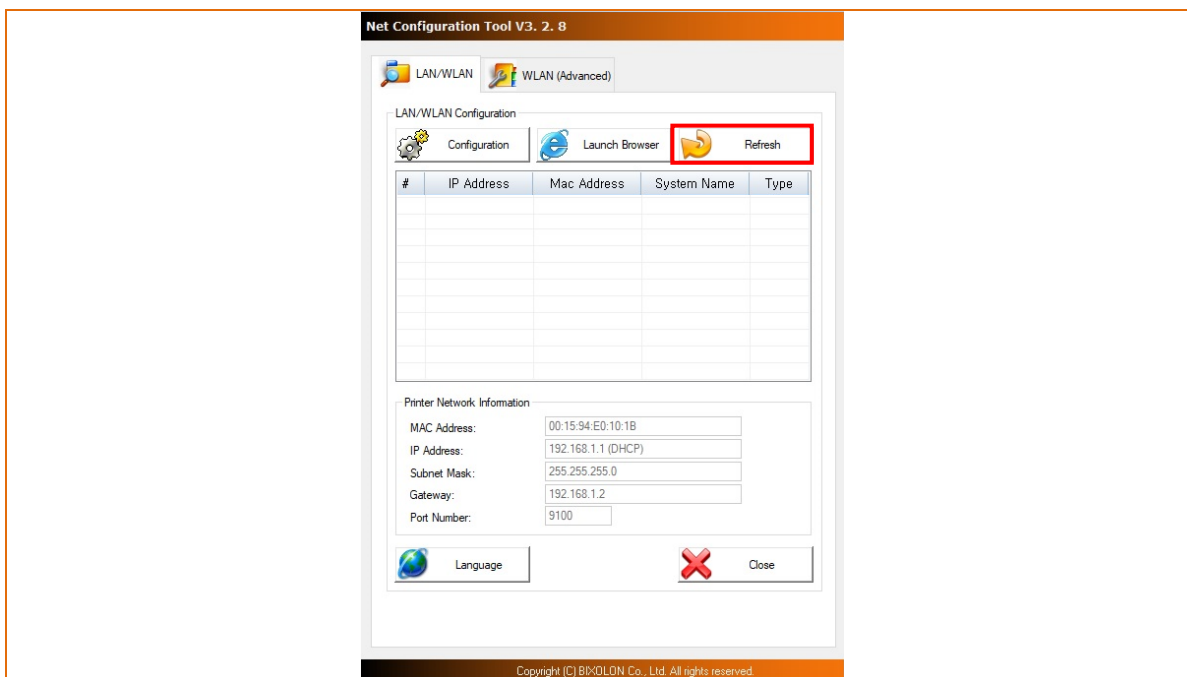   (Default settings are Username: "admin", Password: "password")

7) When you log in, you will see the web browser for changing the Ethernet settings as shown below.

4-3-2 WLAN Configuration(After initial Wireless LAN Connection)

1) When you press the Search button, the printer connected to the network will be shown
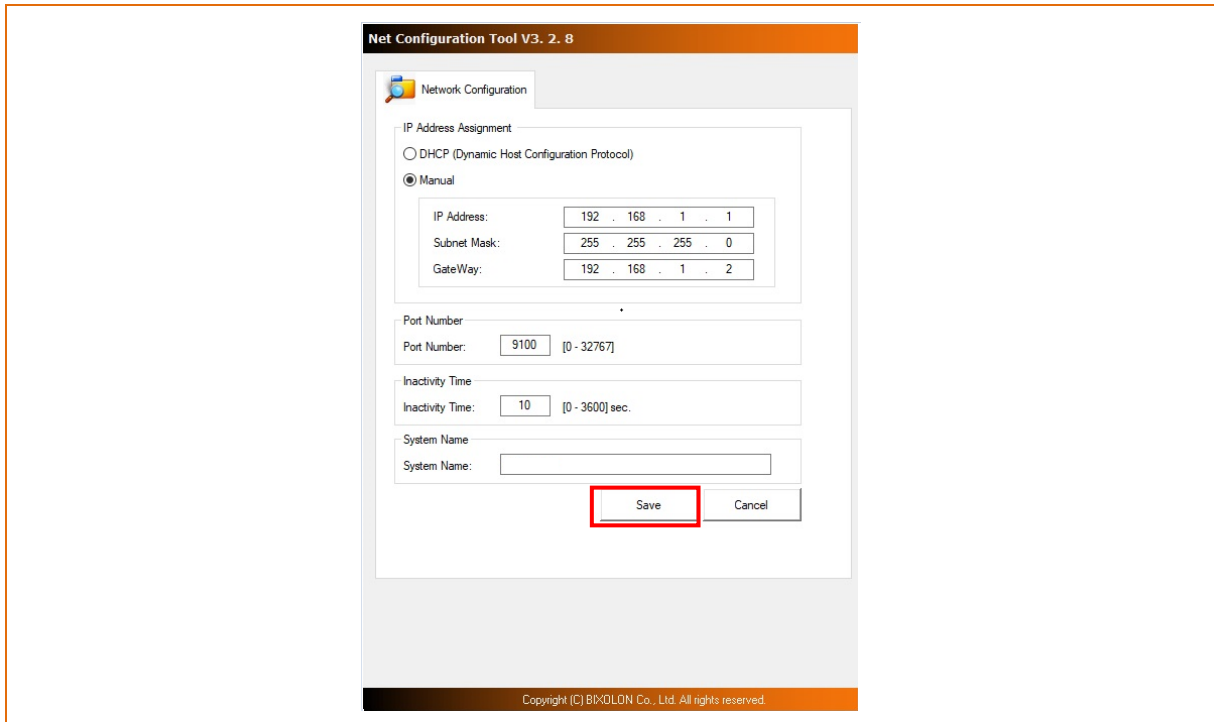   in the list.

2) Select the printer from the list and press the [Configuration] button, and then the
   following window for changing the WLAN settings will pop up.
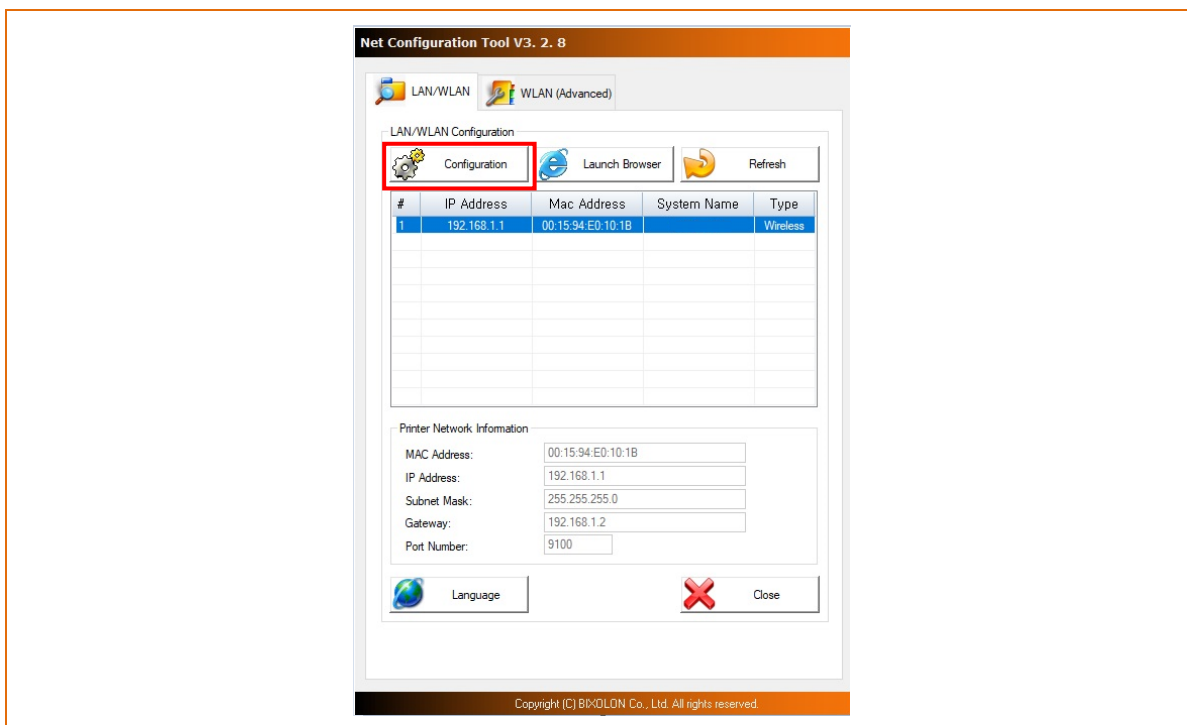
3) Enter the proper IP Address, Subnet Mask, and Gateway of the currently used network, and then click the [Save] button to save the settings.
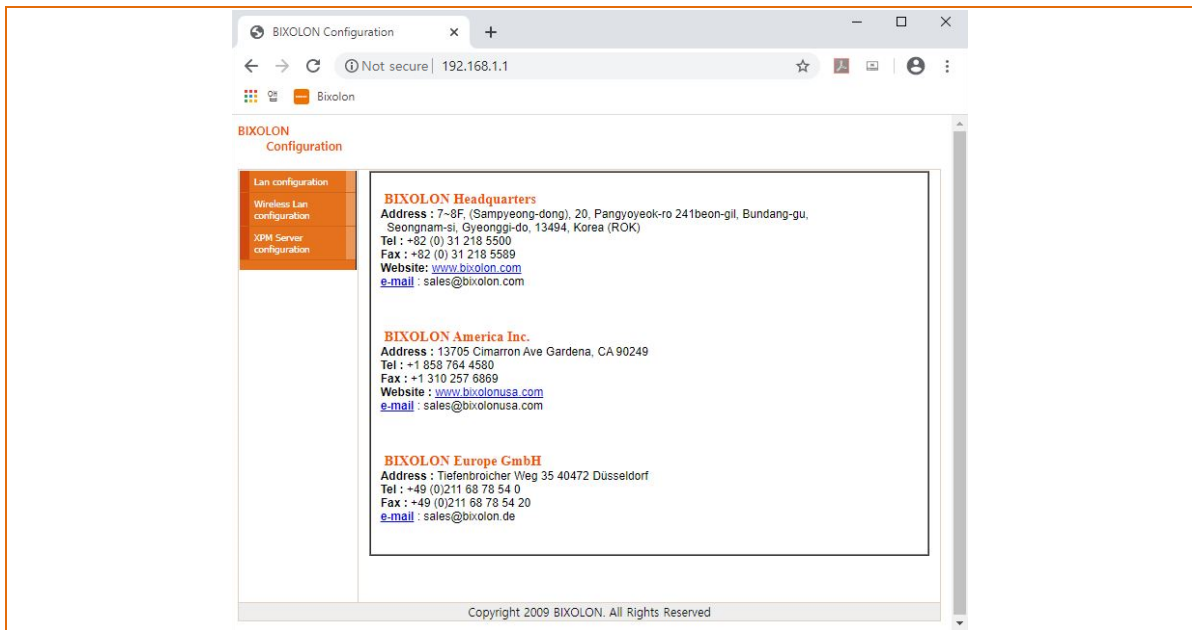

4) Select the printer from the list and press the [Launch Browser] button, and then the Login window will pop up. Enter the Username and Password set in the printer, and click OK. (Default settings are Username: "admin", Password: "password")
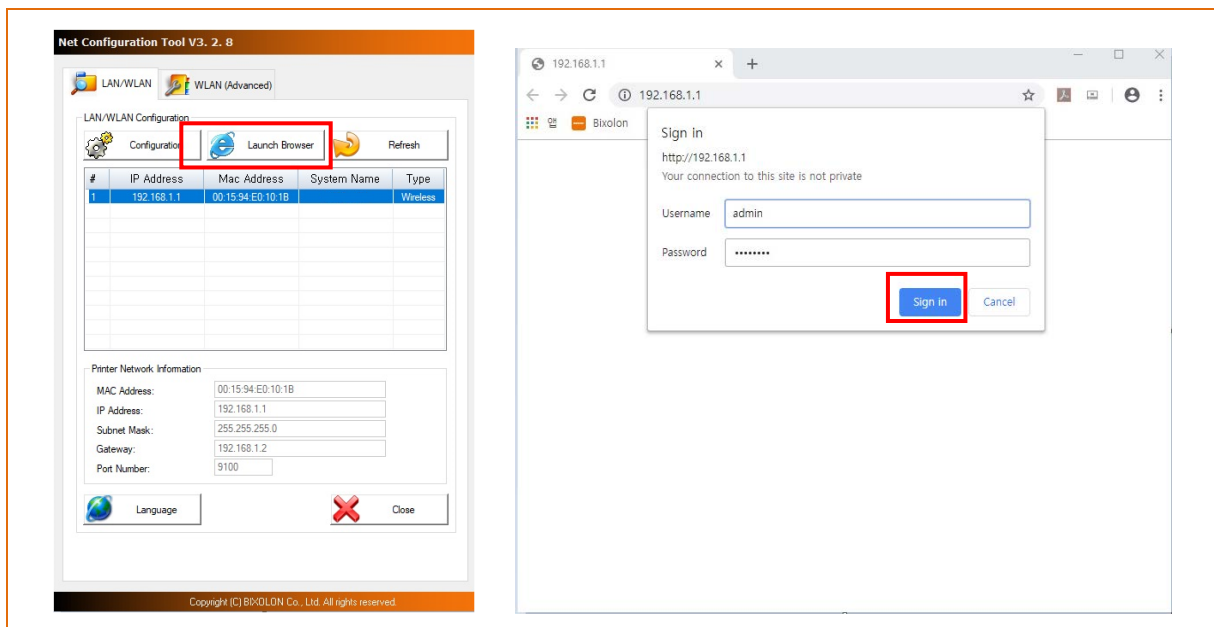
5) When you log in, you will see the web browser for changing the WLAN settings as shown below.

4-3-3 WLAN Configuration(USB Cable)

※ Available on V01.40 or higher version

1) Click [WLAN(Advanced)] tab to configure WLAN settings using USB cable

2) Click [Connect] after printer connection via USB to configure Network(WLAN), Protocol, System, Authentication..etc. for network environment in use. Then click[Save] to save the settings.

4-4 Web Browser

Enter the IP address of the printer in the address bar, and the following login window will pop up. Enter the Username and Password set for the printer, and then click [OK].
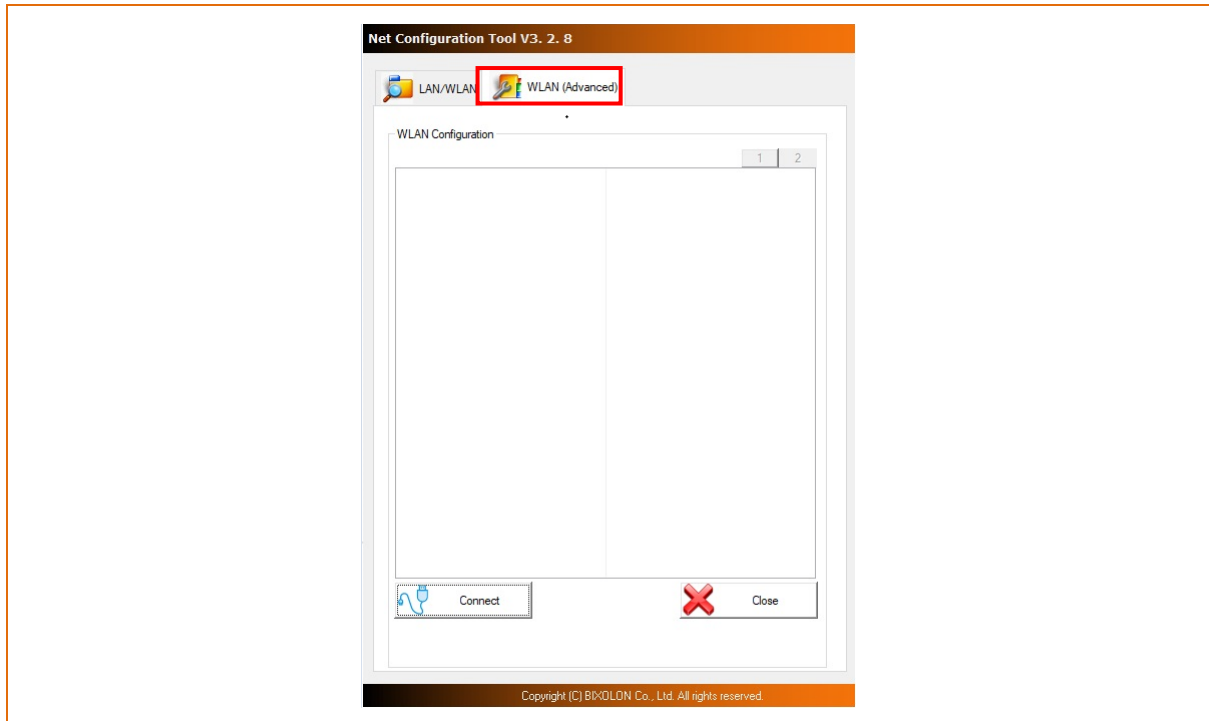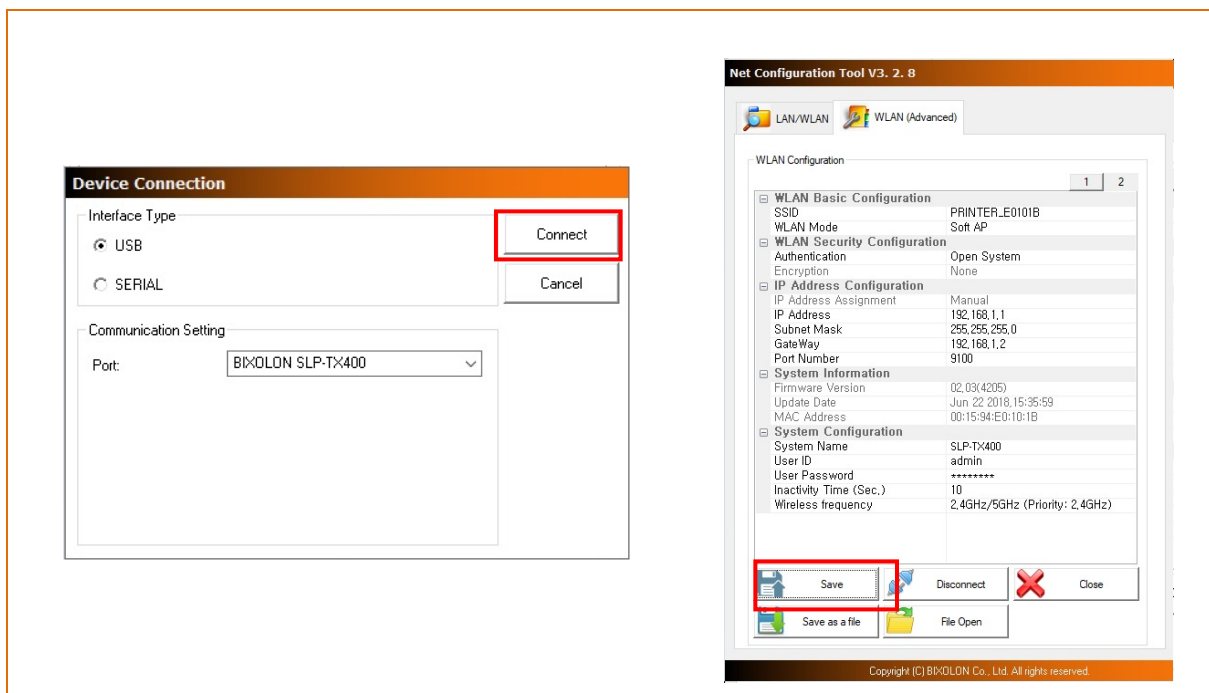(Default setting values are Username: "admin", Password: "password".)
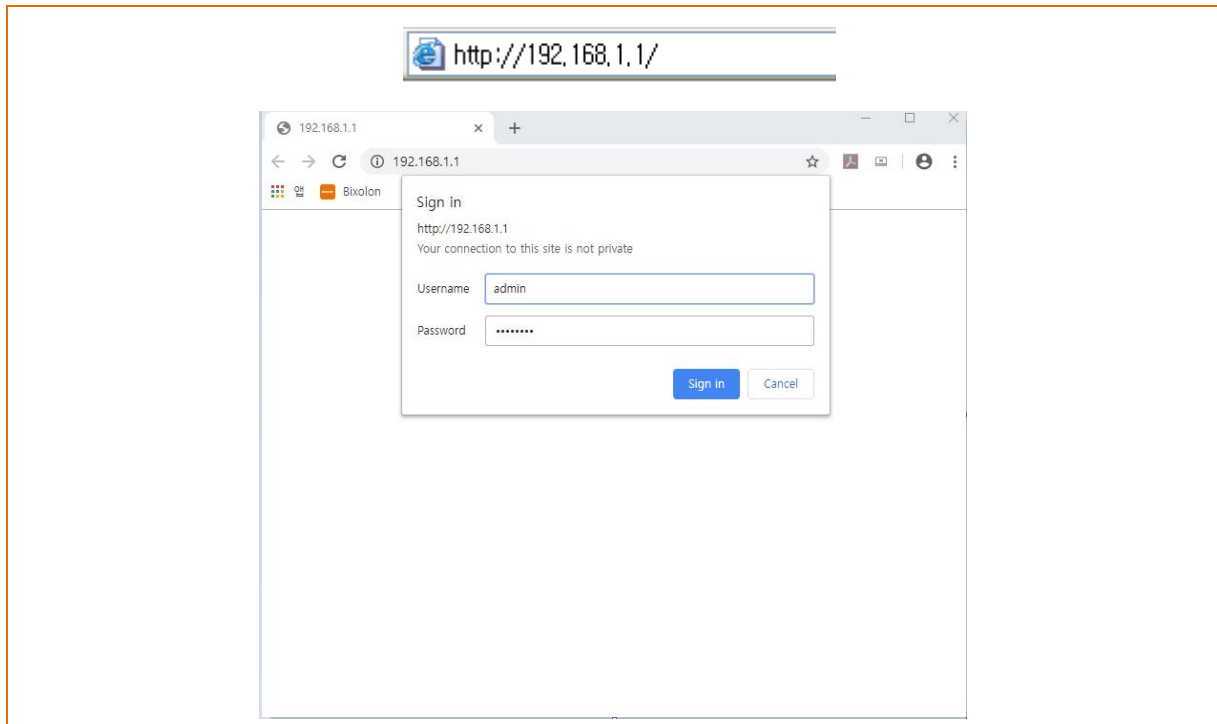
When the Username and Password match the ones registered in the printer, the following window will be opened.

4-4-1 Ethernet Configuration Selection

Click "Lan configuration" on Web browser first login page.
Settings related to Home, System, Protocol, and Network(LAN) can be configured in this window.
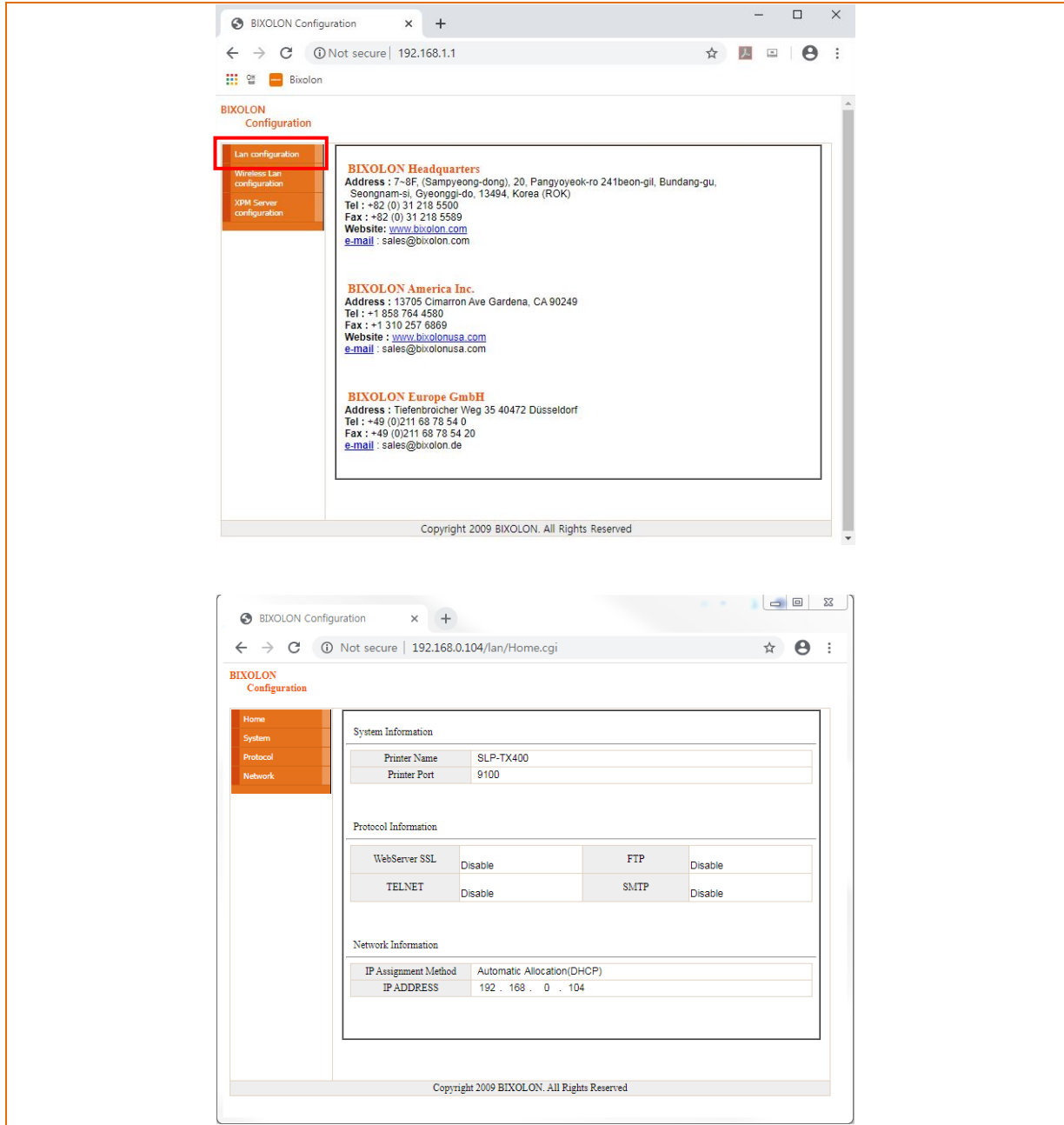
4-4-2 Wireless LAN selection

Click "Wireless Lan configuration" on Web browser first login page.
Wireless, Network(WLAN), Traffic ,Security and ETC can be configured from this window.
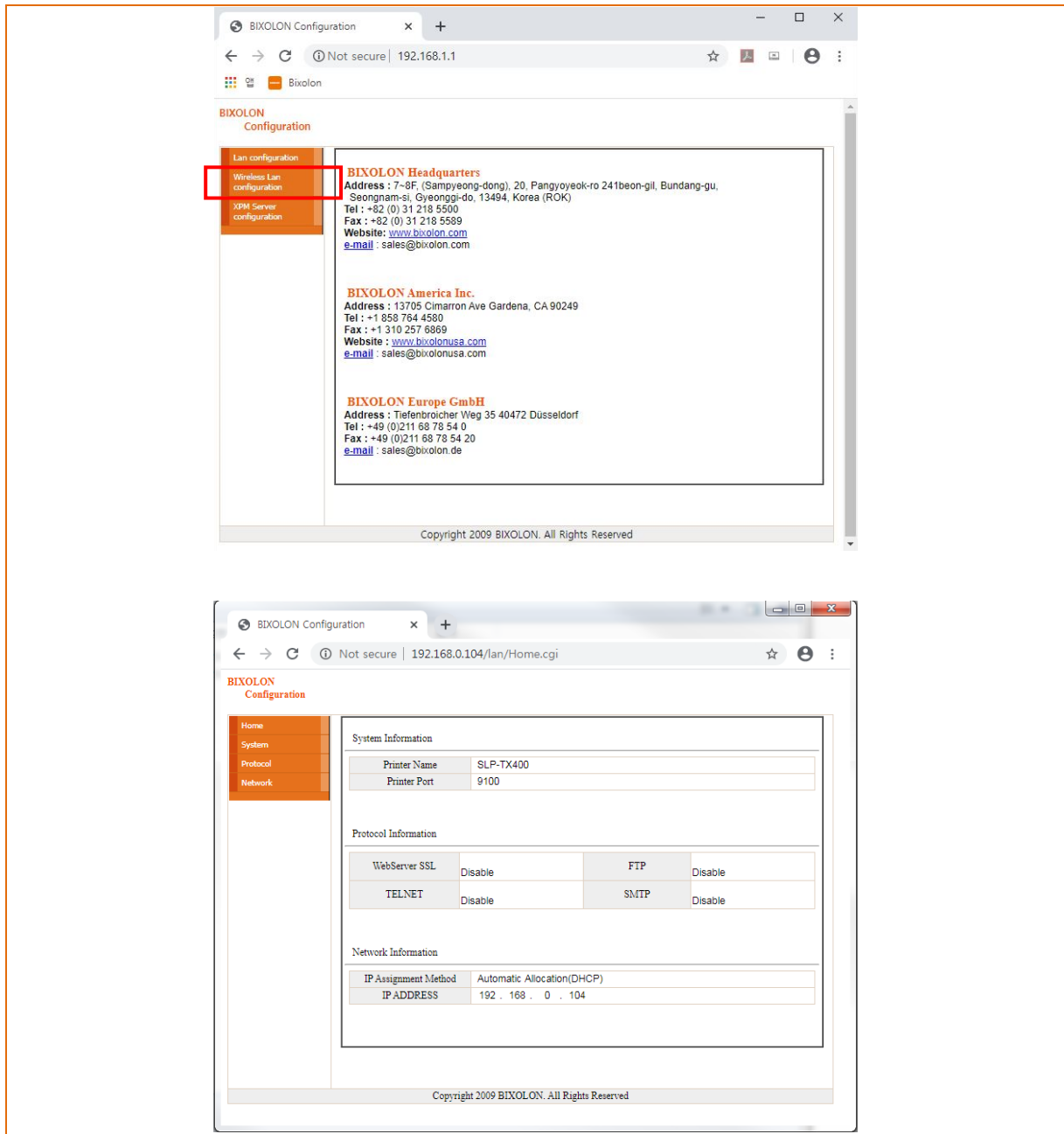The Wizard mode is also provided for easier step by step configuration.
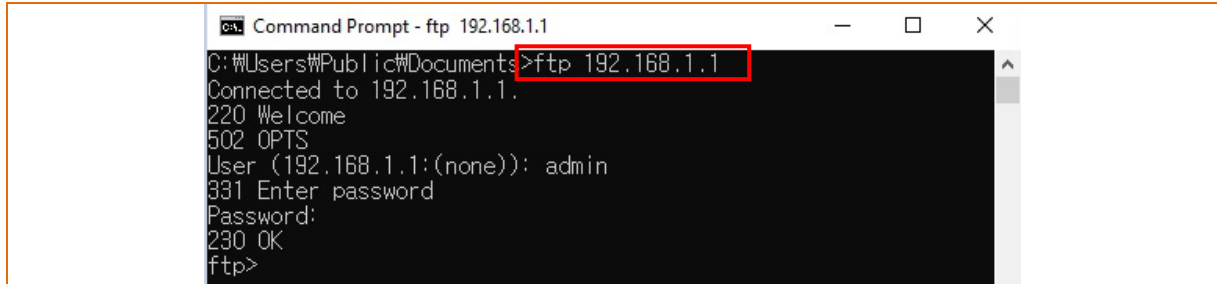
4-5 FTP
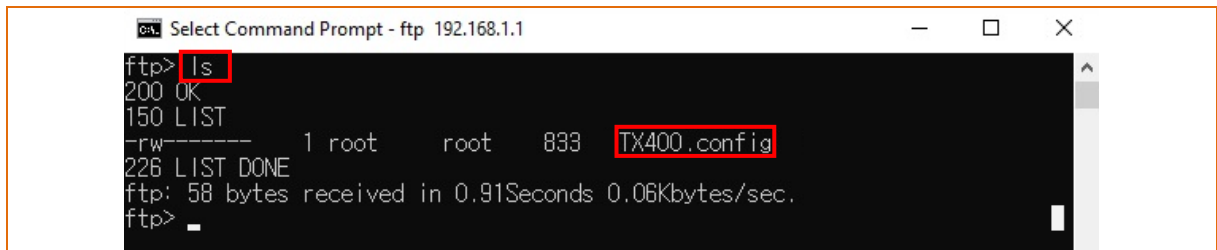
• The configuration files will be downloaded and uploaded to and from the current path. In the following case, the current path is "C:\Users\Public\Documents".

Enter "ftp Printer IP", and enter the User and Password set for the printer.
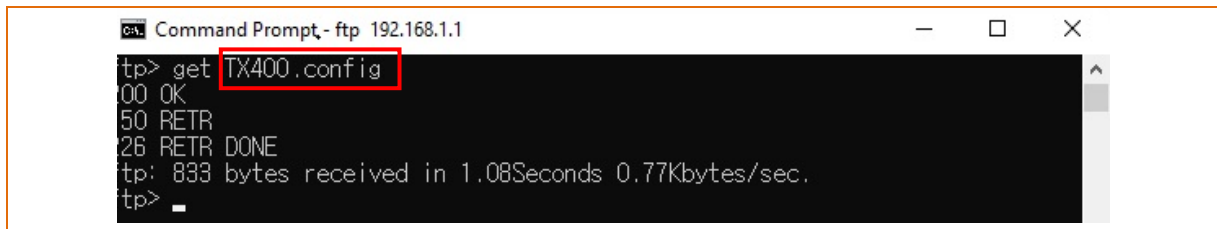
Enter the "ls" command to check the file name to download.
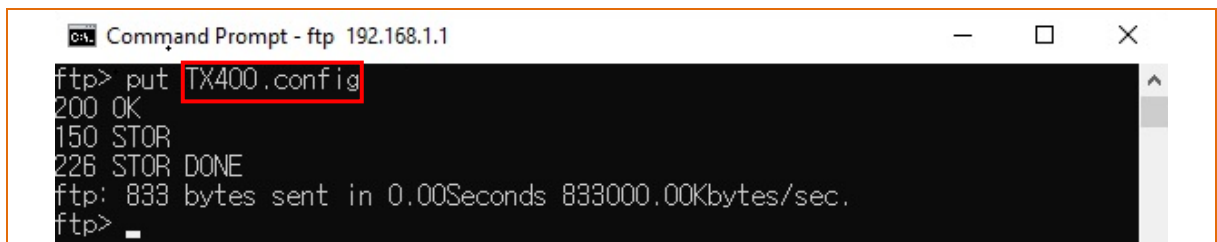
Enter "get [Printer name].config" to download the configuration file.

You can see that the "[Printer name].config" file is created in the corresponding directory.

Enter "put [Printer name].config" command if you want to upload the configuration file in the corresponding directory for the printer.

The contents of the [Printer name].config file are as follows.
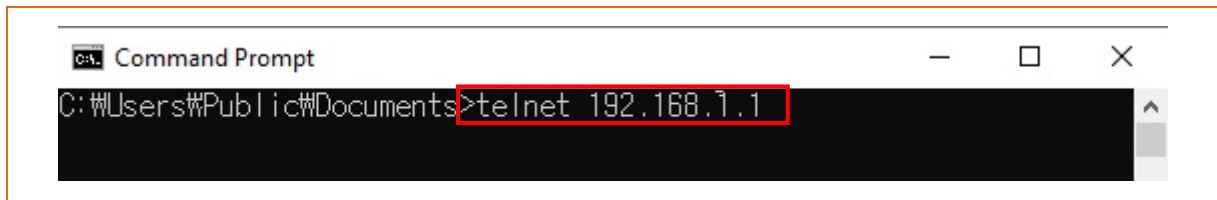
```
TX400.config

File  Edit  Format  View  Help

System
        Printer Name : SLP-TX400
        User ID : admin
        Password : password
        Port : 9100
Protocol
        FTP Enable : 1
        Telnet Enable : 1
        HTTPS Enable : 0
        SMTP Enable : 0
        SMTP Port : 25
        SMTP User :
        SMTP Password :
        SMTP Server :
        SMTP From :
        SMTP To :
        SMTP Interval(Sec) : 3
DNS
        DNS : 168.126.63.1
Inactivity time
        InactivityTime : 0
Ethernet
        LAN DHCP Mode : 1
        LAN IP Address : 192.168.1.1
        LAN Subnet Mask : 255.255.255.0
        LAN Gateway : 192.168.1.3
WLAN
        WLAN Mode : infra
        WLAN Adhoc Channel : 6
        WLAN Authentication : open
        WLAN Cryptograph : none
        WLAN EAP Mode : none
        WLAN EAP ID :
        WLAN EAP Password :
        WLAN ESSID : BIXOLON_adhoc
        WLAN WEP Key :
        WLAN PSK Key :
        WLAN DHCP Mode : 0
        WLAN IP Address : 192.168.1.1
        WLAN Subnet Mask : 255.255.255.0
        WLAN Gateway : 192.168.1.2

                                              Ln 1, Col 1
```
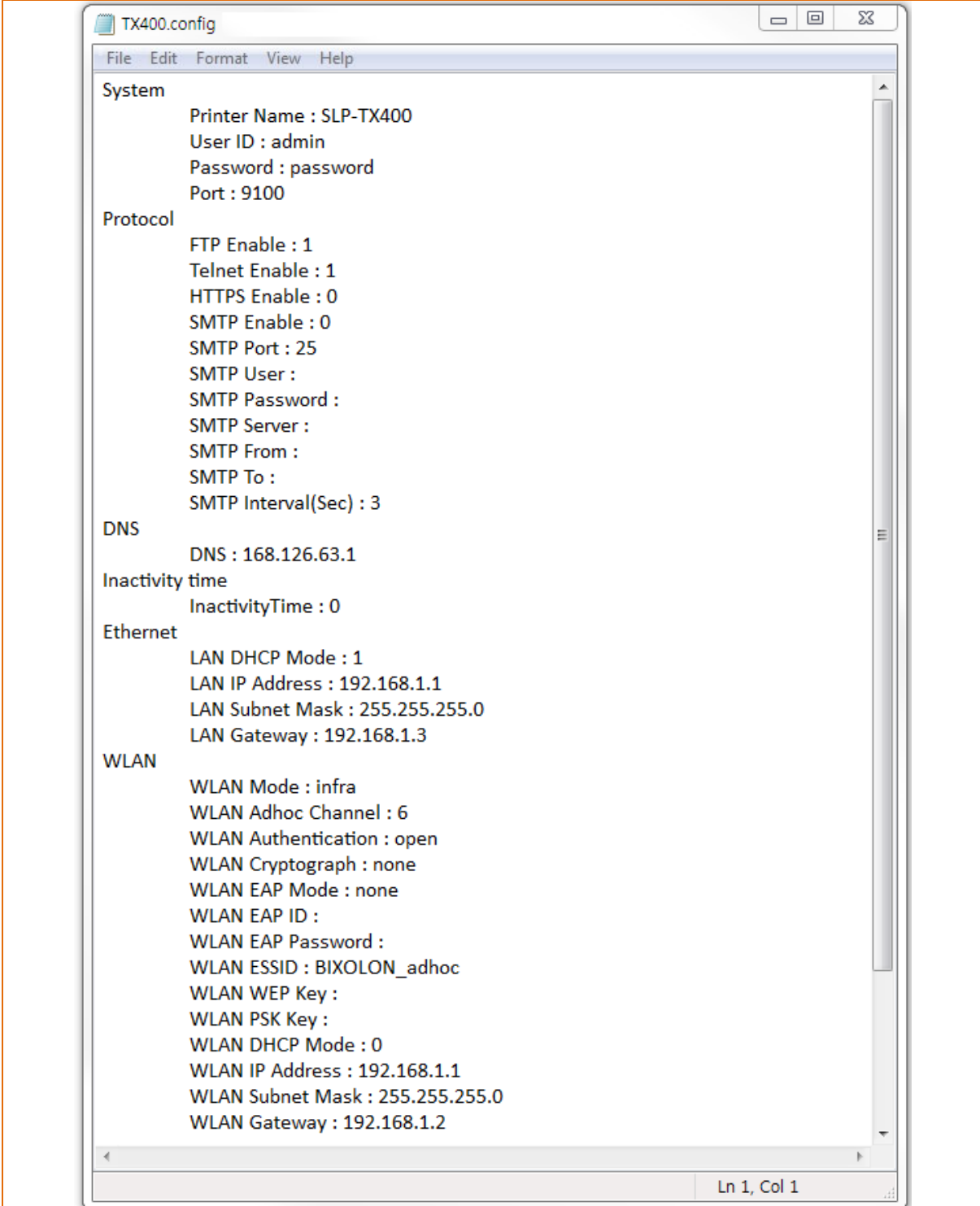
* The format of the configuration file is "Configuration item: Setting value".
  Uploading a file that doesn't have the format shown above will not change the setting values.

4-6 Telnet

Enter "telnet Printer IP".

Enter the Username and Password set for the printer.

The screen related to the network configuration will then be displayed.
You can select the menu to configure and edit the settings.

4-7 SMTP

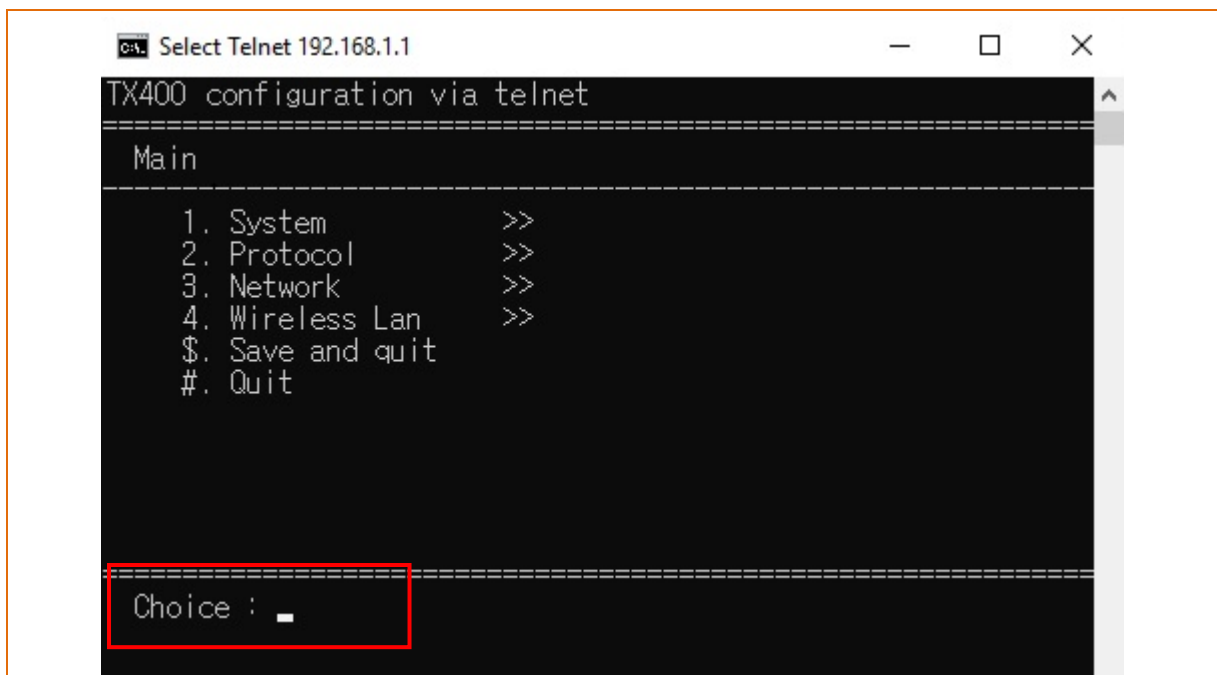• The changes of the status of the printer are monitored, and a notification e-mail is sent to the registered administrators.

SMTP must be enabled to use the SMTP function.
You can use the web browser, telnet, or ftp to enable the SMTP.
(Refer to Configuration)

Using Web Browser
Connect to the printer web-server.(Enter the IP address of the printer in the address bar.)
Select LAN configuration, and then select the Protocol tab.

Function	Set-up	
TELNET	Disable ▼	
FTP	Disable ▼	
SMTP	Enable ▼	Configuration
	SUBMIT	

BIXOLON Configuration

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Click the Configuration button to display the following window.

SMTP	Set-up
SMTP User ID	userid@mail_server
SMTP Password	•••••••
SMTP Server Name	mail_server
SMTP Port Number	25
From Address	userid@mail_server
To Address	administor@mail_server
Check Interval(Sec)	3
Paper Empty	OFF ▼
Cover Open	OFF ▼
Cutter Error	OFF ▼
Ribbon	OFF ▼
Calibration Error	OFF ▼
TPH Over Heat	OFF ▼
Paper Jam	OFF ▼
	SUBMIT

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Check the SMTP setting values

SMTP User ID	Check the ID registered to the mail server
SMTP Password	Enter the password for the corresponding User ID
SMTP Server Name	Enter the mail server(Example: Domain or mail server IP) * Check DNS settings when entering domain
SMTP Port Number	Enter SMTP port Default value of the SMTP Port is 25
From Address	Enter the e-mail address to be shown at the mail receiver
To Address	Enter the e-mail address to receive
Check Interval	Enter the period to check the printer status Entered value will be effective in second unit
Paper Empty	ON – E-mail is sent out when there is no paper OFF – Paper empty status is not checked
Cover Open	ON – E-mail is sent out when the printer cover is open OFF – Printer cover status is not checked
Cutter Error	ON – E-mail is sent out when there is error in the auto cutter OFF – Auto cutter error is not checked
Near End	ON – E-mail is sent out when the printer is almost out of paper OFF – Paper remaining status is not checked
Ribbon	ON – E-mail is sent out when there is no ribbon OFF – Paper empty status is not checked
Calibration Error	ON – E-mail is sent out when calibration is failed OFF – Doesn't check auto paper setting errors
TPH Over Heat	ON – Check TPH when overheated OFF – Doesn't check TPH overheat
Paper Jam	ON – E-mail is sent out when paper is jammed OFF – Doesn't check paper jam

5. Ethernet / WLAN Test by using Windows Test Page

You can use the Windows printer driver as shown below when there is no test program.
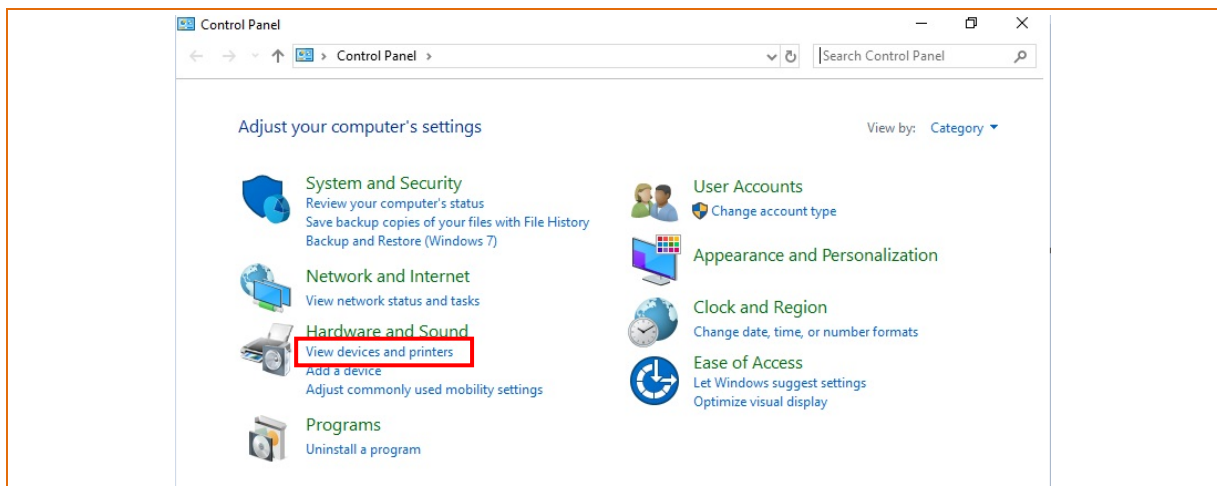
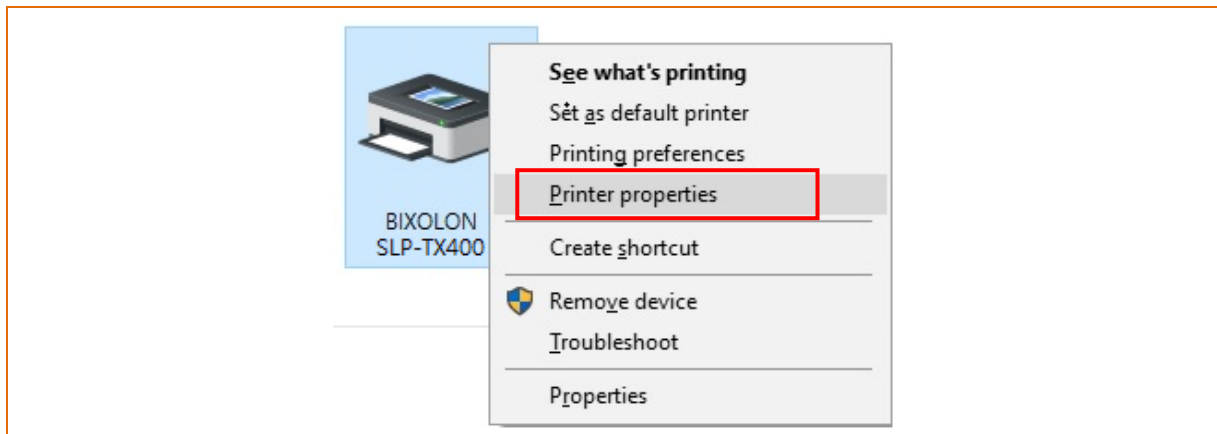1) Install the Windows printer driver.

> *[Note]*
> - You can download from our home page the Windows driver.
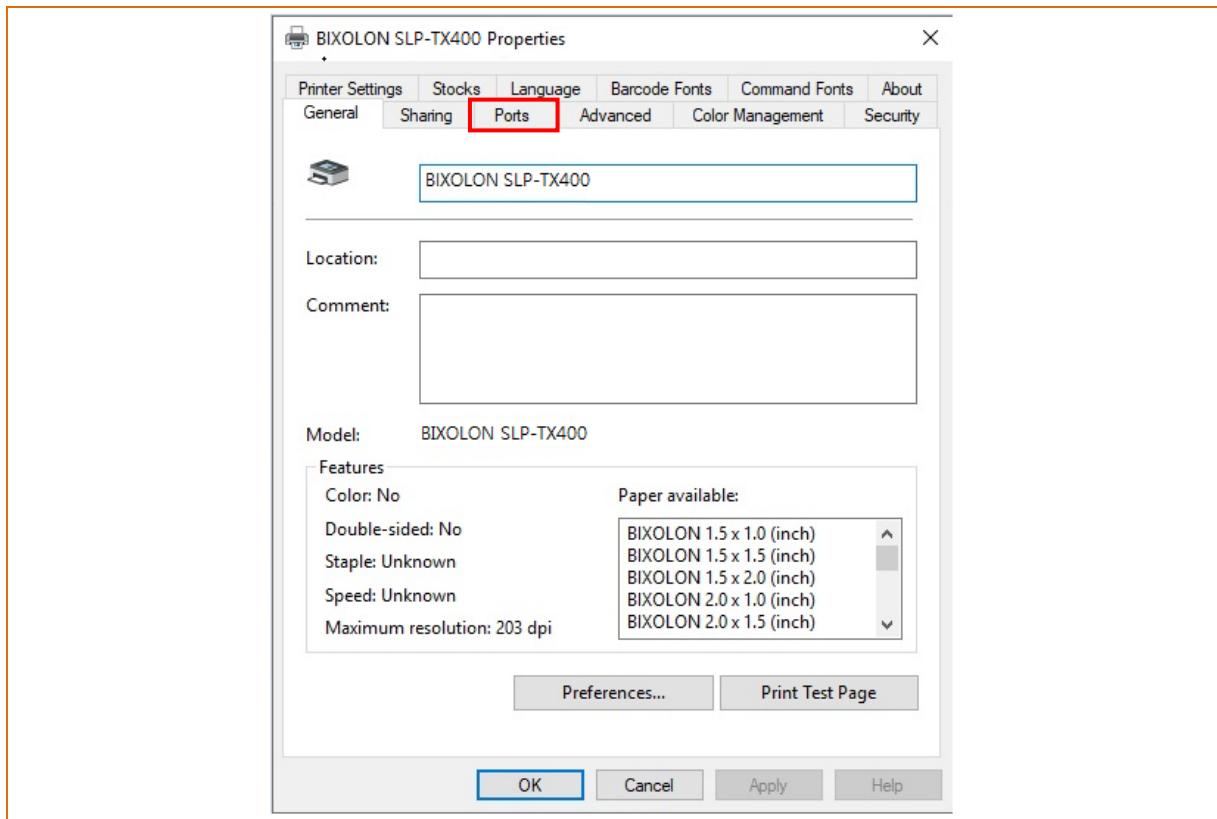>   (**www.bixolon.com**)

2) Click the "View devices and printers" from the Control Panel.

3) Select and right click on the corresponding model, and then select "Printer properties."

4) Select the "Ports" tab from the "Properties" window.

5) Click "Add Port…"
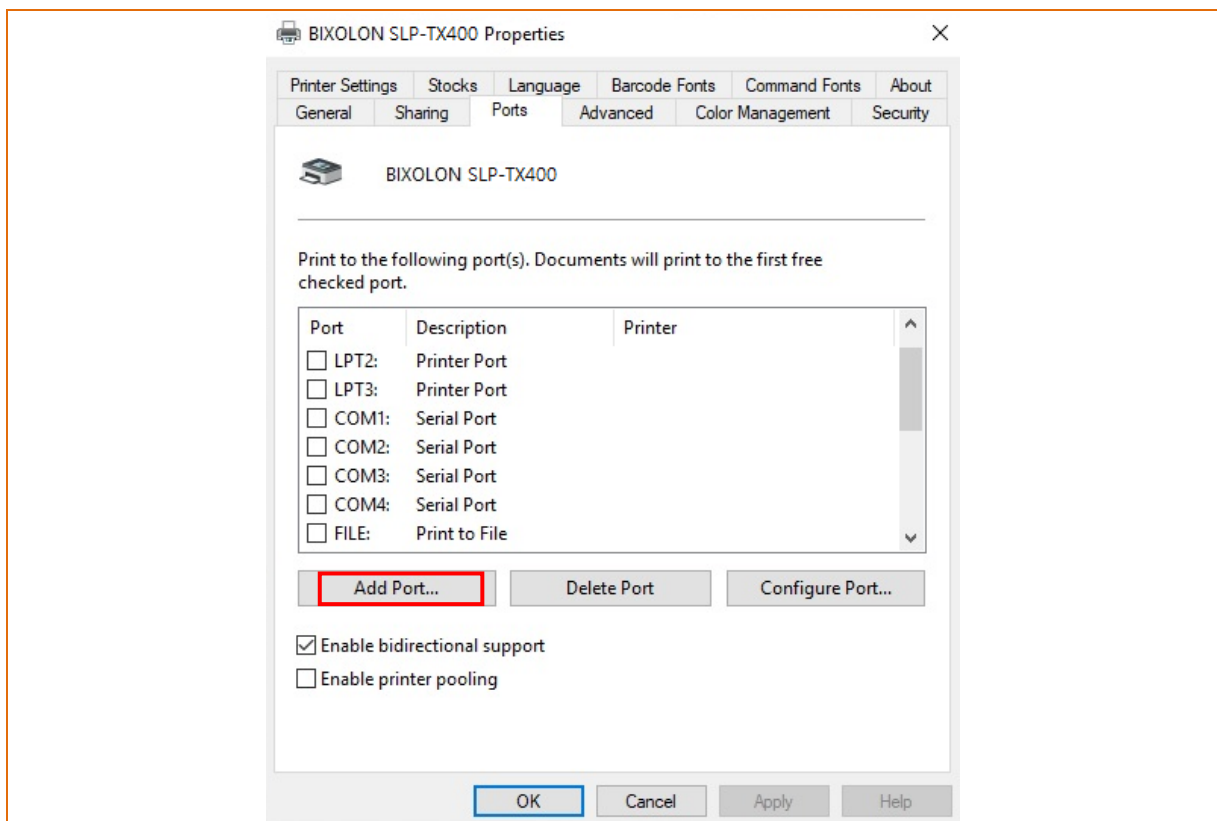
6) Select "Standard TCP/IP Port" and click "New Port..."
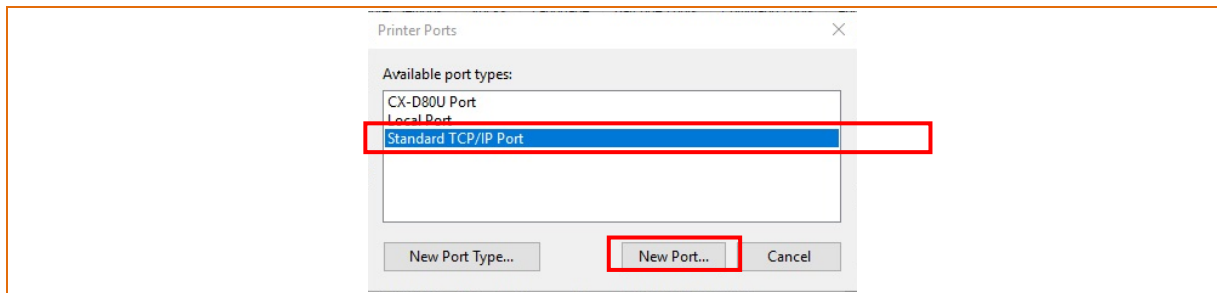
7) Click the [Next] button in the "Add Standard TCP/IP Printer Port Wizard" window.
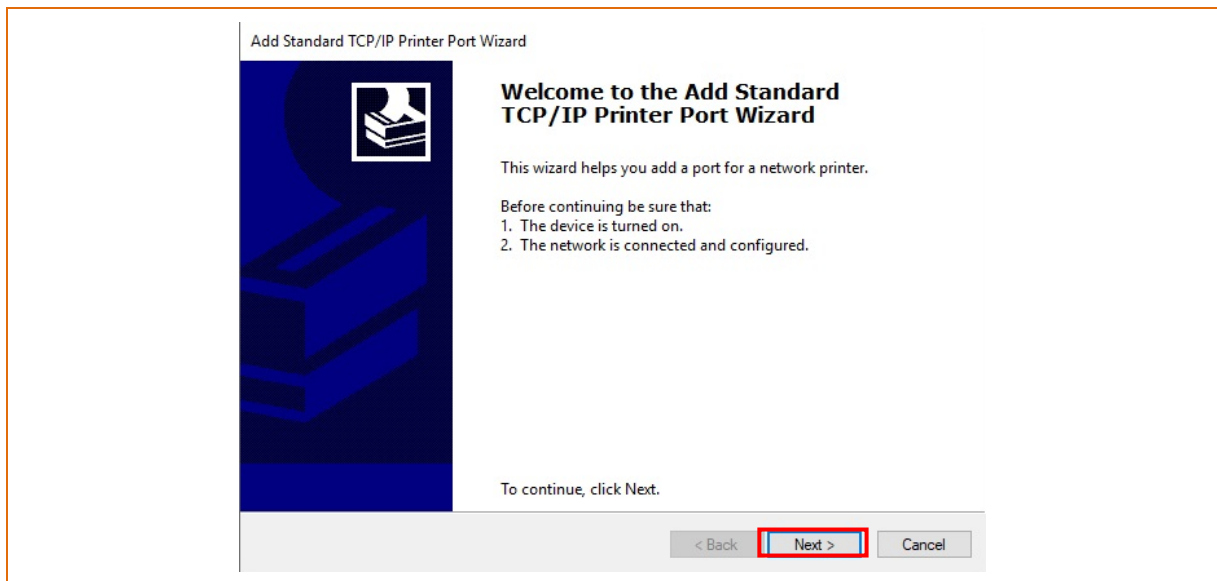
8) Enter the IP address assigned to the printer in the "Printer Name or IP Address" field in the "Add Port" pop up window, and then click the [Next] button.
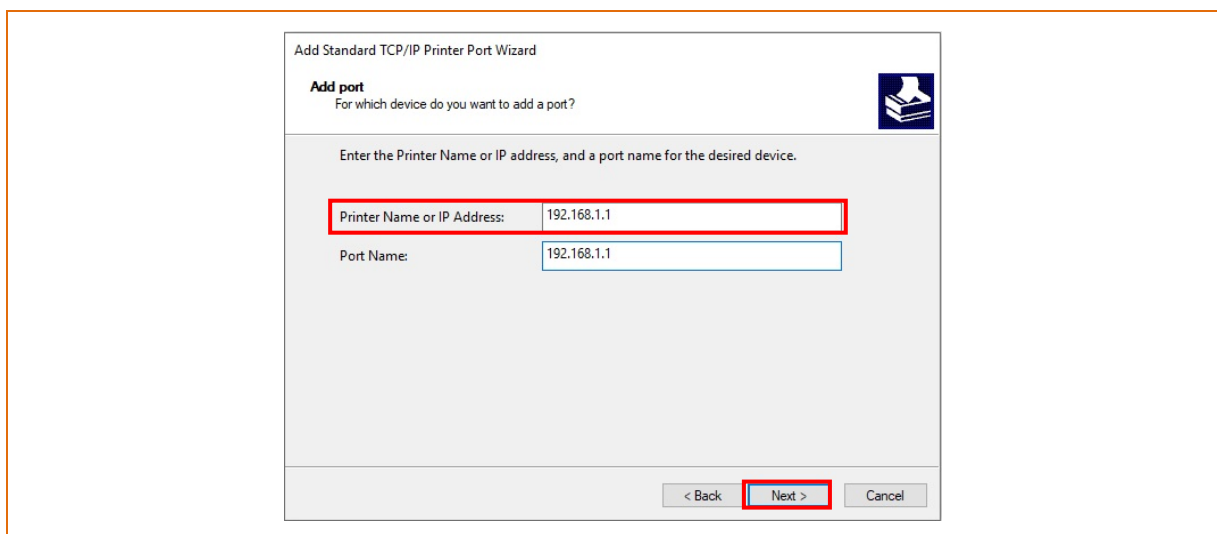
[Note]
- Enter the same IP address entered during the installation of the interface card.
  Only enter the "Printer name or IP address."

9) Click the [Next] button in the "Additional Port Information Required" window.
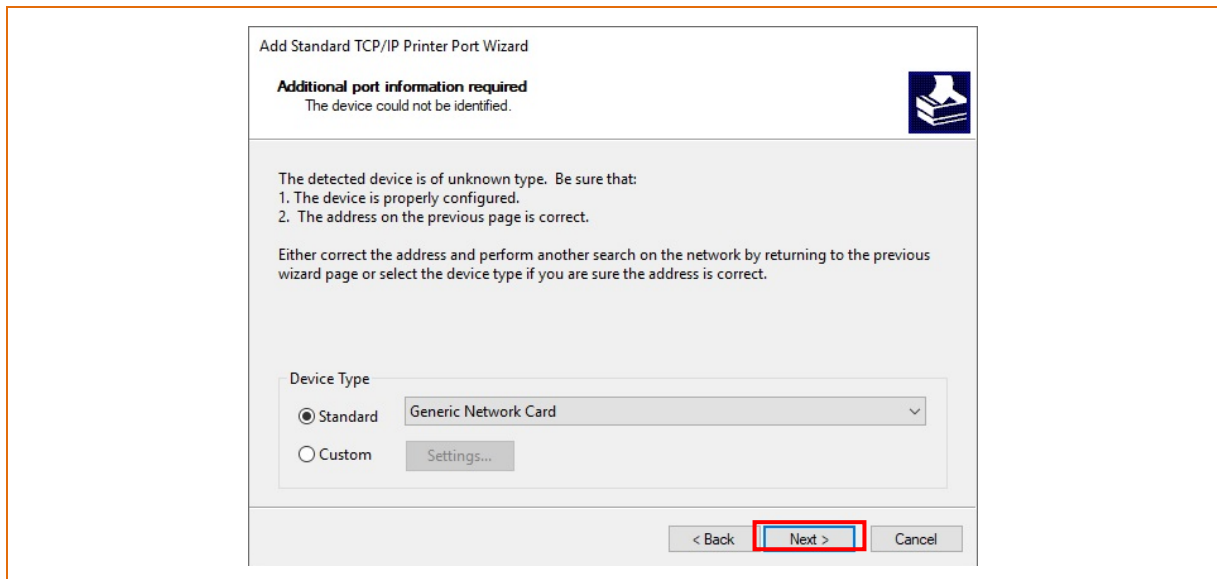
[Note]
 - Click the [Next] button to proceed without any changes.

10) Click the [Finish] button at the "Completing the Add Standard TCP/IP Printer Port Wizard" window.
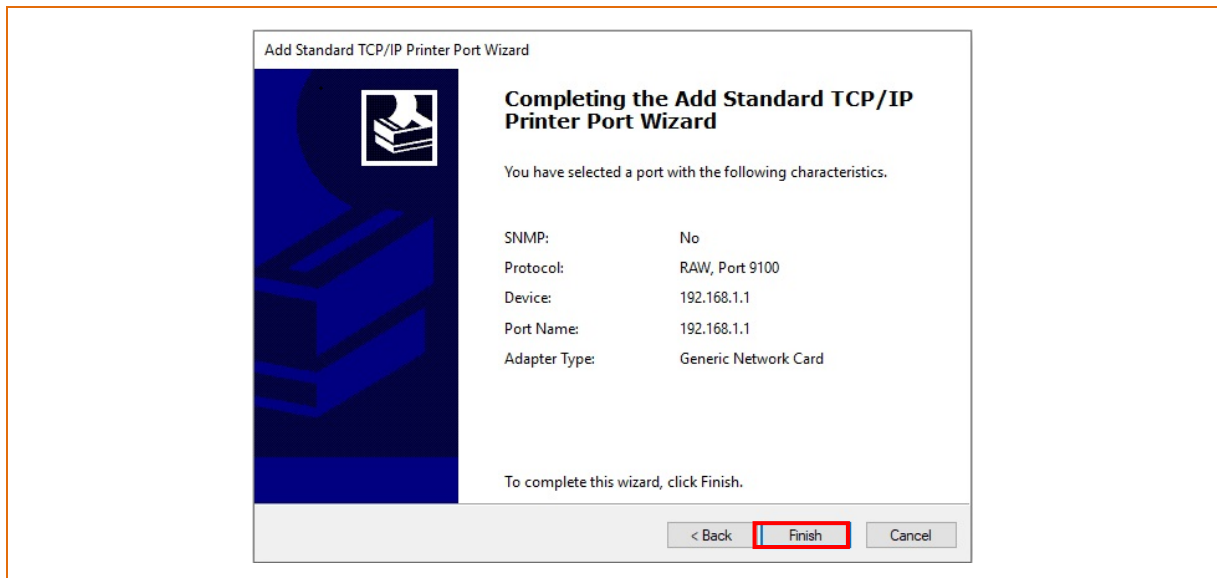
11) Click the "Cancel" button in the Printer Port window, closing the window.
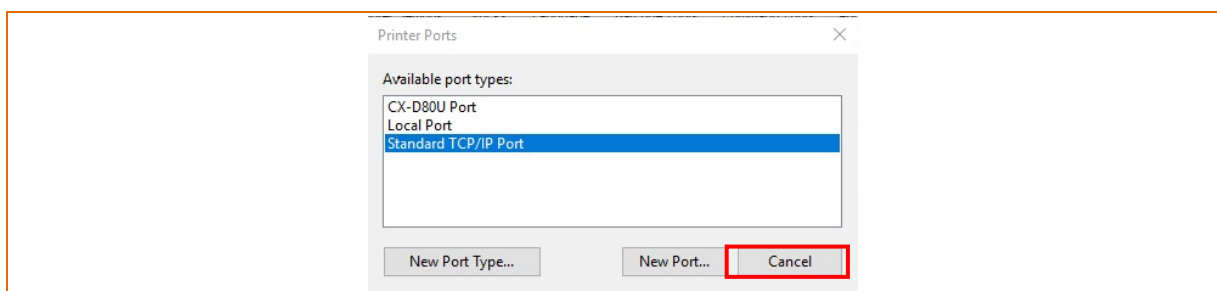
12) Click the "Configure Port..." button in the "Properties" window.
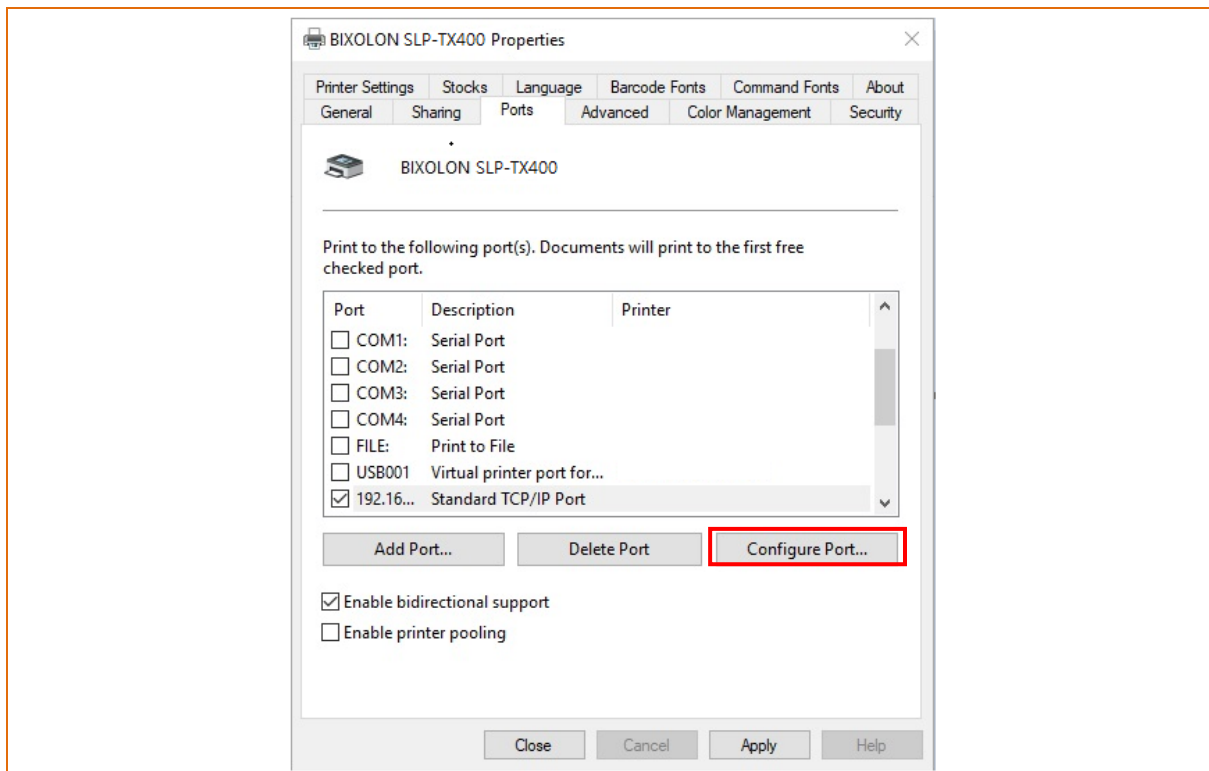
13) Enter the same number as the local port number set during the installation of the interface card in the "Port Number" field in the Raw Settings.
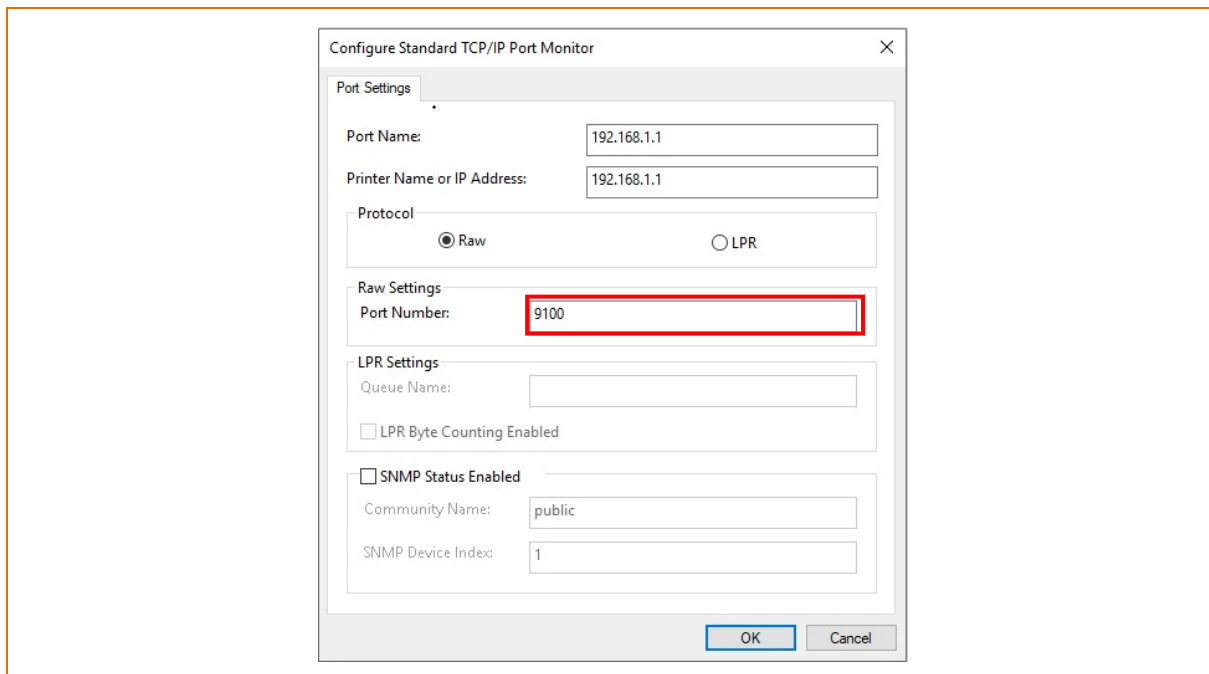
[Note]
- Do not change any other items except the RAW Settings.

14) Click [OK] when you finish entering the required values, and then click the [Apply] button.
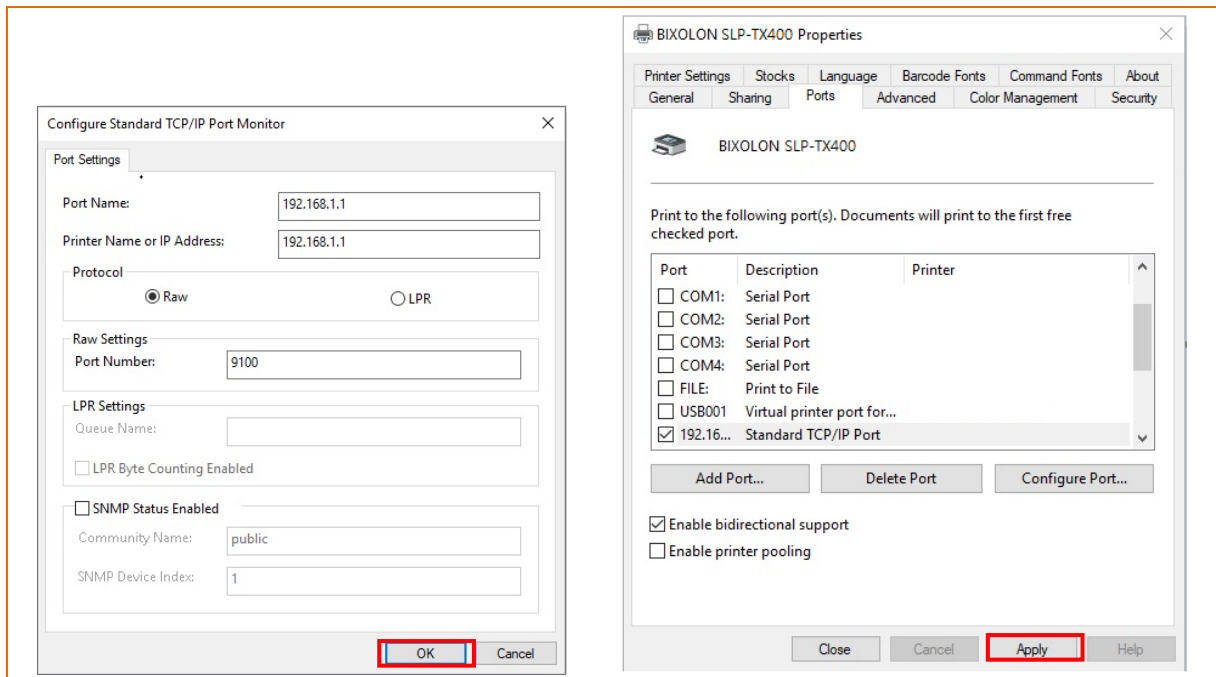
15) Select the "General" tab in the Properties window, and then select the "Print Test Page" to check the printing status.
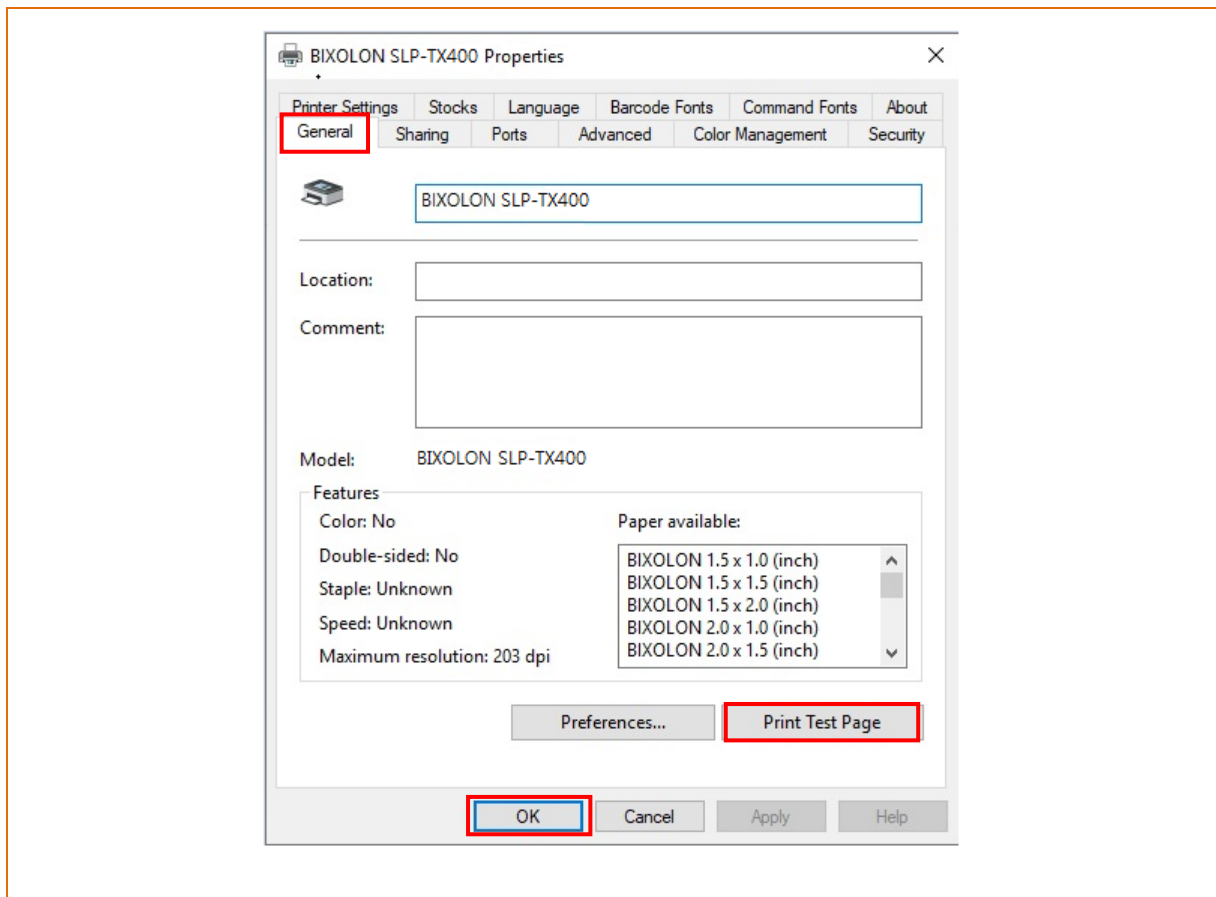
6. Factory Reset

This function changes the Ethernet and WLAN settings of the printer to the initial factory settings.

- SSID of WLAN will be reset as Default(BIXOLON_adhoc)

Method(There are 2ways to make the printer WLAN reset)
1) In order to carry out the factory reset, turn off the printer, and then turn on the printer while pressing the reset button as shown in the following picture.
   (Please wait for about 10 to 15 seconds while holding down the reset button)

2) Send the network factory.bin file to the printer via Unified Label Utility.

* Network Self Test
  - Push the below reset button to check the Ethernet, WLAN information.

[TX40x]
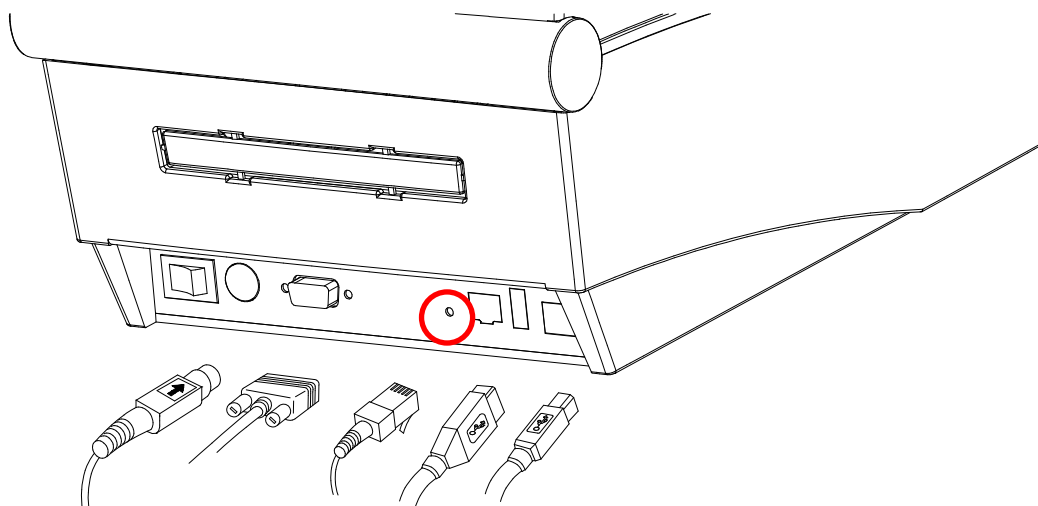
[TX42x/DX42x]
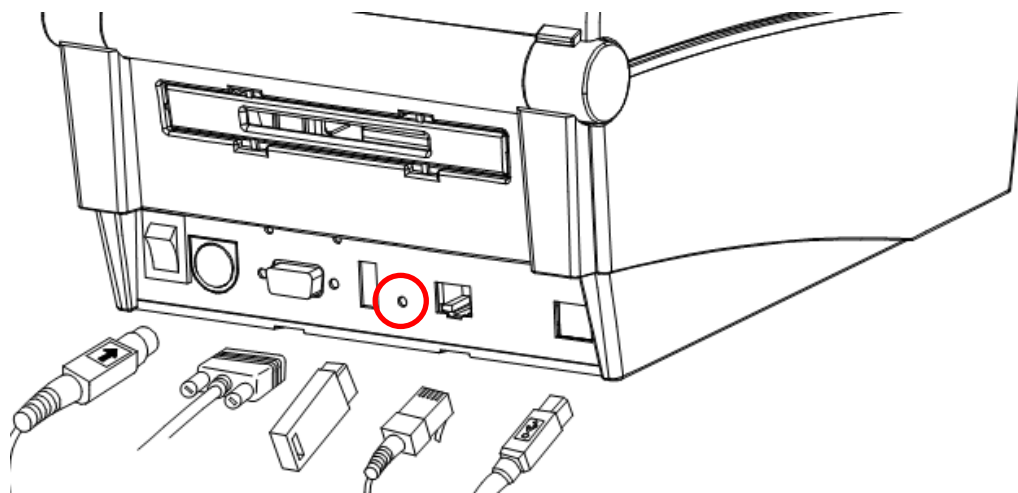
[DX22x/TX22x]
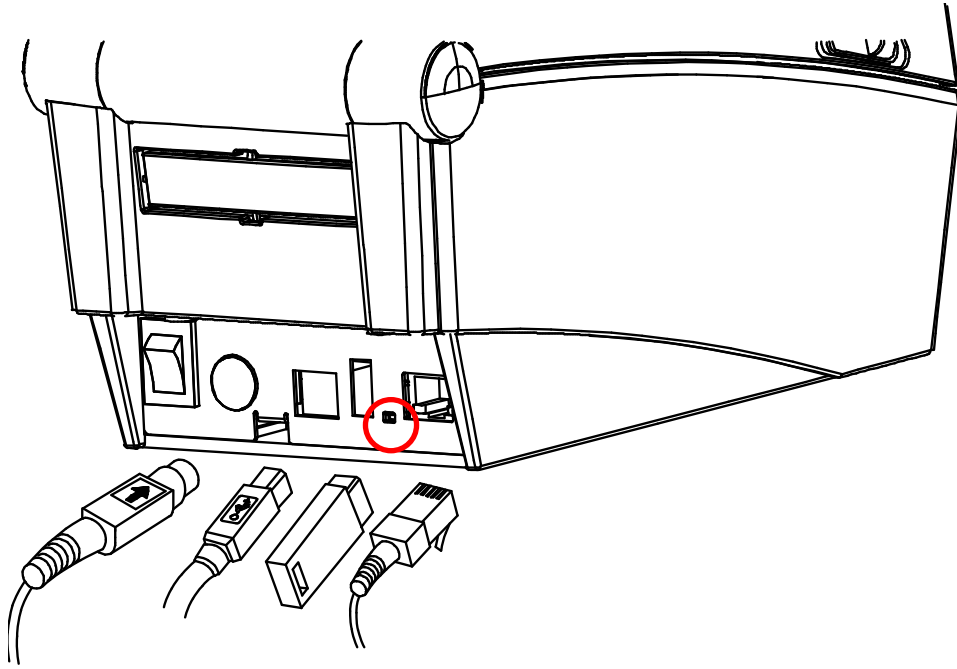
[DL41x]
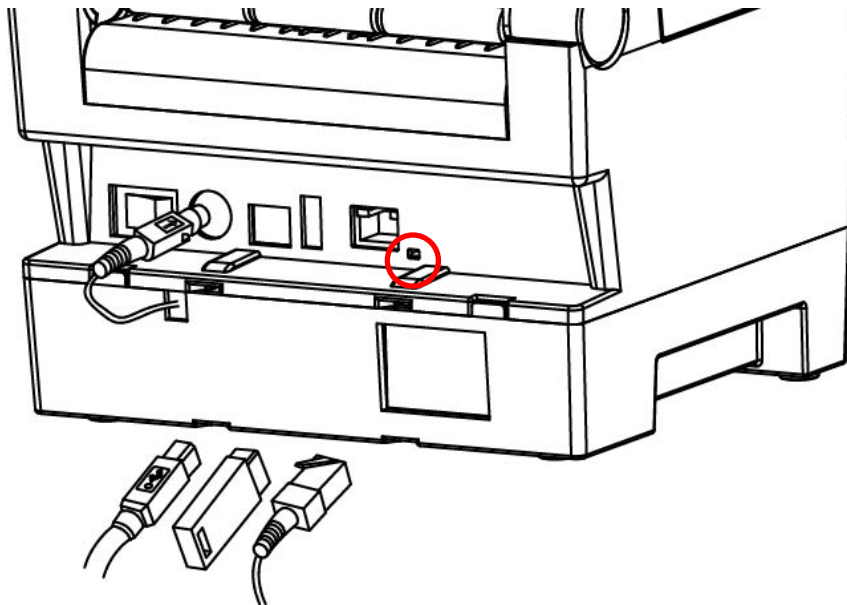
[770III/E770III]
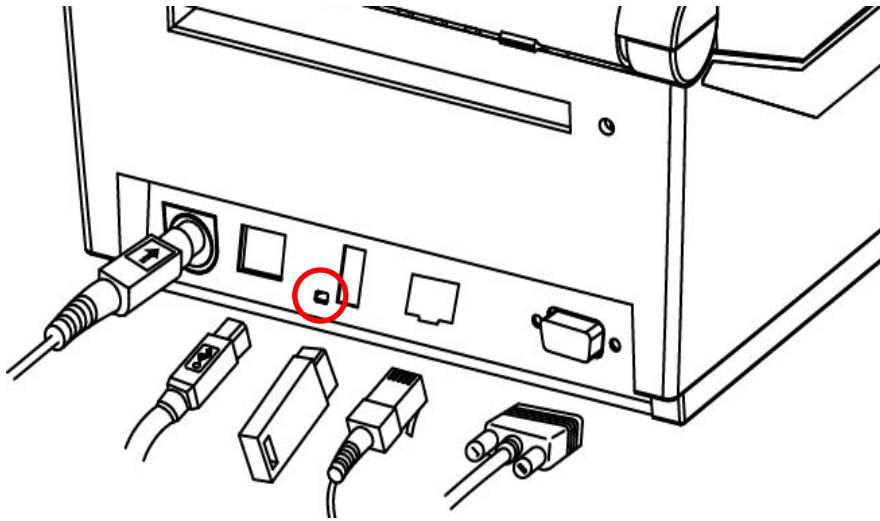
7. Troubleshooting

When printing doesn't work
Check network setting

When using Ethernet

- IP Address

  Check whether the IP Address band of the printer rand the AP(or wireless terminals) are the same. The first three digits of the four digit value in the IP Address must be the same.

- Subnet Mask

  Check whether the subnet mask of the printer matches with the one in AP(or wireless terminal).

- Port

  Check whether the port configured in the printer and the host(PC, PDA) are the same.

When using WLAN

Check the wireless network setting of the AP and the printer.
(Refer to Configuration for checking/changing the printer settings)

- SSID

  Check whether the SSID of the printer matches with the one in AP(or wireless terminal)

- 802.11 mode

  Check whether AP supports 802.11a, 802.11b or 802.11g.

- Network Mode

  Check the network mode of the printer.

  Network mode must be set to "Infrastructure" to connect to AP and "Ad-hoc" to connect between wireless terminals.

- IP Address

  Check the band of the IP Address.

  Check whether the band of the printer and the AP(or wireless terminals) are the same.

  The first three digits of the four digit value of the IP address must be the same.

- Subnet Mask

  Check whether the subnet mask of the printer matches the one in AP(or wireless terminal).

- Port
  Check whether the port configured in the printer and the host(PC,
  PDA) are the same.
- Authentication/Encryption
  Check the authentication/encryption setting status.
  Check whether the settings of the printer and the AP(wireless
  terminals) are the same.
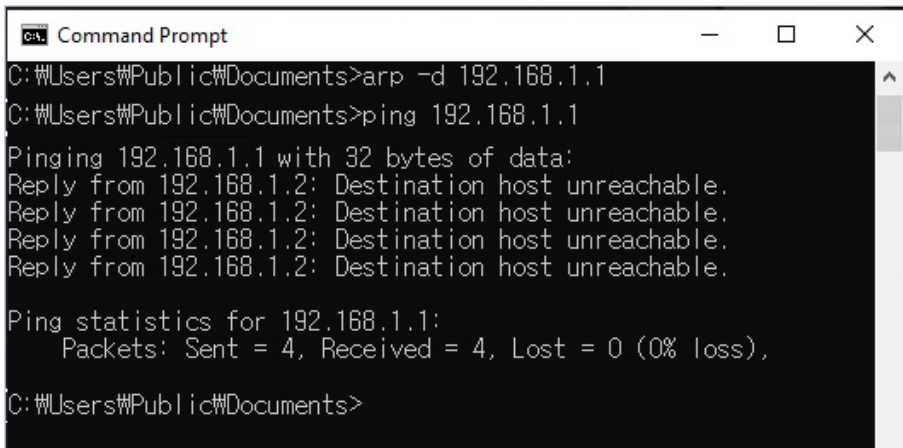
PING Check

Checking IP collision

- When entering IP address manually without using DHCP, you must
  check whether the corresponding IP address is used by other
  equipment. The printer may not work normally when there is a
  collision in the IP address.
- When the printer is turned off, carry out the Ping Test to the printer IP.

Ping TEST

- Turn off the printer.
- Search "cmd" and then click "Open".
- Enter "ARP –d {printer IP}" and delete ARP table.
- Enter "ping {printer IP}".
- ARP –d, ping {IP address}

```
Command Prompt                                     —    □    ×

C:\Users\Public\Documents>arp -d 192.168.1.1

C:\Users\Public\Documents>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.2: Destination host unreachable.
Reply from 192.168.1.2: Destination host unreachable.
Reply from 192.168.1.2: Destination host unreachable.
Reply from 192.168.1.2: Destination host unreachable.

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

C:\Users\Public\Documents>
```

When you see "Destination host unreachable." as shown below, it means that there is no collision. The corresponding IP can be used.

On the other hand, if there is a reply as shown below, then the corresponding IP is used by another network terminal and it cannot be used for the printer IP.


```
Command Prompt                                         —    □    ×

C:\Users\Public\Documents>ping 192.168.1.1

Pinging 192.168.1.1 with 32 bytes of data:
Reply from 192.168.1.1: bytes=32 time=357ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64
Reply from 192.168.1.1: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.1:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum = 357ms, Average = 89ms

C:\Users\Public\Documents>
```
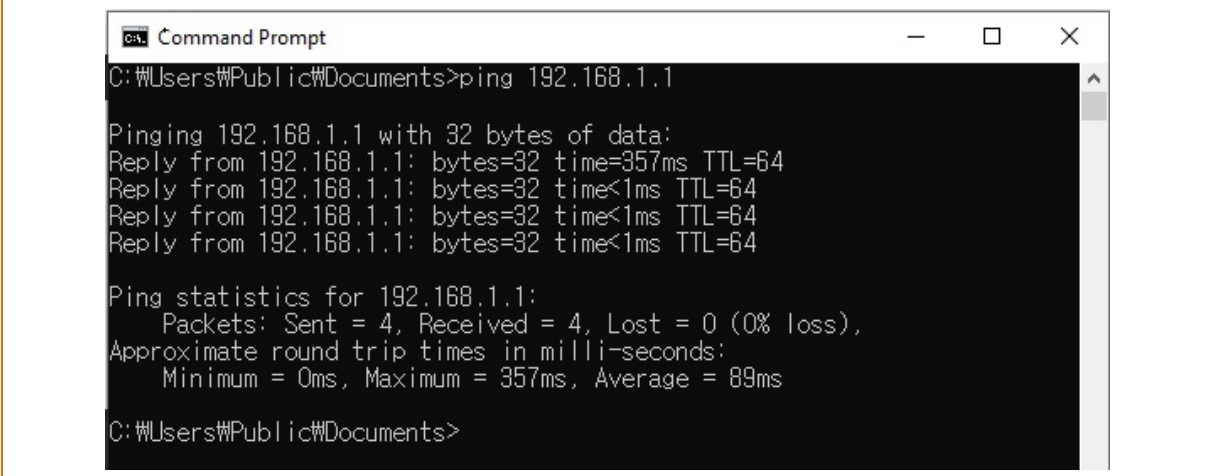
Check Cable

When using Ethernet

- In order to check whether the problem is due to the LAN cable, connect the cable connected to the printer to other terminals or the PC to confirm whether its operation is normal.

When using WLAN

- It is recommended to use the USB extended cable provided by BIXOLON.
- Connect the USB extended cable and WLAN dongle to other terminals or the PC and confirm whether recognition operation is normal.
- Check whether WLAN USB adaptor uses the Ralink RT73 chipset. WLAN USB adaptors that use chipsets other than RT73 of Ralink won't work when it is connected to Printer.

Default Values

Printer Name	Printer Name	SLP-TX400/TX403
		SLP-TX420/TX423
		SLP-TX220/TX223
		SLP-DX420/DX423
		SLP-DX220/DX223
		SLP-DL410/DL413
		SRP-770III/E770III
	Printer Port Num	9100
	User ID	admin
	User Password	password
Protocol	FTP	Disable
	TELNET	Disable
	SMTP	Disable
		SMTP Server Name: ""
		SMTP Port Number: 25
		From Address: ""
		To Address: ""
		Check Interval(Sec): 10
		Paper Empty: OFF
		Cover Open: OFF
		Cutter Error: OFF
		Near End: OFF
Authentication	Open System	None
	Shared key	None
LAN	IP Assignment Method	DHCP
WLAN	Network Mode	Ad-hoc, channel 6
	SSID	BIXOLON_adhoc
	IP Assignment Method	manual
	IP, Subnet, Gateway	IP : 192.168.1.1
		Subnet : 255.255.255.0
		Gateway : 192.168.1.2

Revision History

Rev.	Date	Page	Description
2.00	22.01.20	-	New